# CHAIN OF CUSTODY RECORD

**STEWART ENVIRONMENTAL CONSULTANTS, LLC.**
**2600 Canton Ct, Unit C, Fort Collins, CO 80525**

**Batch:**

Telephone: (970) 226-5500
Facsimile: (970) 226-4946 PAGE ____ OF ____

| Client No. / LAB | CLIENT: **Stewart Environmental** | | | | | | | | SAMPLER Print: James Stewart Signature: |
|---|---|---|---|---|---|---|---|---|---|
| Sample No. | SAMPLE COLLECTION INFO | | | | SAMPLE IDENTIFICATION / NAME | Matrix Type | QC Report Needed | Total No. of Bottles | Analyses Requested |
| | Date | Time | Grab / Comp | Chlorine (ppm) if applicable | | | | | |
| | 8.23.17 | 15:00 | G | | Q. MW-12 | WW | 1 | 8 | **8260B Including: 1,1-DCE; Freon-11; Freon-113; Trans 1,2-DCE; 1,1-DCA; Cis-1,2-DCE; Chloroform; 2-Butanone (MEK); 4-Isopropyltoluene; 1,1,1-TCA; Trichloroethelene (TCE); Toluene; tetrachloroethylene (Perc); tetrahydrofuran (THF); vinyl chloride; total xylenes; benzene; Acetonitrile (Methyl Cyanide); Ethyl Methacrylate; 2-Pentanone, 4-Methanone** |
| | | | | | | | | | **8270 Expanded List** |
| | | | | | | | | | **Phenols, TKN, Mercury, Cyanide, Total Phosphorous, TOC** |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Notes:**

| Relinquished by | Date / Time | Received by | Date / Time |
|---|---|---|---|
| | 8.23.17 19:00 | Lauren Lau | 8/24/17 1415 |
| Relinquished by | Date / Time | Received by | Date / Time |
| Relinquished by | Date / Time | Received by | Date / Time |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = liquid W = water
S = soil SL = sludge
A = Air SD = Solid

____CDPHE REPORT REQUIRED

PWSID #

**REPORT TO: Trevor Mueller**

PHONE: 970.226.5500 FAX:

E-MAIL: Lab@stewartenv.com

CLIENT:

ADDRESS: **2600 Canton Ct, Suite C**

CITY, STATE, ZIP: **Fort Collins, CO 80525**

INVOICE TO:

ADDRESS:

CITY, STATE ZIP:

# Sample Receipt Checklist

**STEWART ENVIRONMENTAL CONSULTANTS, LLC.**
**2600 Canton Ct, Unit C, Fort Collins, CO 80525**

Client: Stratus Initials: JDM Date: 8/24/17 Time: 10:00 MST/MDT

| | To be filled out by laboratory courier, if applicable: | Yes | No | NA |
|---|---|---|---|---|
| 1 | Were samples retrieved by a laboratory courier? | ✓ | ✓ | |
| 2 | Were samples on ice or in a refrigerated state upon retrieval? | ✓ | | ✓ |

Courier Initials: JM Date: 8.23.17 Time: 19:00

| | To be filled out by laboratory sample receiving: | | | |
|---|---|---|---|---|
| 3 | Shipping container/cooler intact? | | | ✓ |
| 4 | Chain of Custody (COC) present? | ✓ | | |
| 5 | Sample bottles intact? * | ✓ | | |
| 6 | Samples on blue-ice? | | ✓ | |
| 7 | Samples on wet ice? | ✓ | | |
| 8 | Samples received within 4 hours of sampling? | | ✓ | |

9 Record temperature of sample bottles within cooler with infra-red thermometer.

| Container # | | | | |
|---|---|---|---|---|
| Temp °C | 7.2 | | | |

| | | Yes | No | NA |
|---|---|---|---|---|
| 10 | Sample thawed and free of any ice? * | ✓ | | |
| 11 | COC complete, legible, signed and dated? | ✓ | | |
| 12 | Labels on bottles complete and legible? * | ✓ | | |
| 13 | COC in agreement with sample bottle labels? * | ✓ | | |
| 14 | Proper container used for analyses requested? * | ✓ | | |
| 15 | Samples requiring preservation preserved correctly? * | ✓ | | |
| 16 | Sufficient sample volume for analyses requested? * | ✓ | | |
| 17 | Samples within holding times for analyses requested? * | ✓ | | |
| 18 | Samples requiring no headspace are free of headspace? * | | | ✓ |

(VOC, TVPH, BTEX, Ethanol, Radon) If no, size of bubble: _____ < green pea, _____ > green pea

* If no, document on Chain of Custody.

Notes: Put into fridge upon arrival

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Analytical Report**

August 04, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Project ID:
ACZ Project ID: L38417

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 13, 2017. This project has been assigned to ACZ's project number, L38417. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38417. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-1

ACZ Sample ID: *L38417-01*
Date Sampled: *07/12/17 12:00*
Date Received: *07/13/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 1 | 15.6 | | * | mg/L | 1 | 5 | 08/01/17 11:00 | bce |

**Arizona license number: AZ0102**

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.


## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REP001.03.15.02

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38417***

**Carbon, total organic (TOC)** SM5310B

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG427972** | | | | | | | | | | | | | |
| WG427972ICV | ICV | 08/01/17 11:00 | WI170707-1 | 100 | | 104 | mg/L | 104 | 90 | 110 | | | |
| WG427972ICB | ICB | 08/01/17 11:00 | | | | U | mg/L | | -3 | 3 | | | |
| WG427972LFB | LFB | 08/01/17 11:00 | WI170531-4 | 50 | | 49.2 | mg/L | 98 | 90 | 110 | | | |
| L38390-01DUP | DUP | 08/01/17 11:00 | | | 87.3 | 91.6 | mg/L | | | | 5 | 20 | RA |
| L38391-01AS | AS | 08/01/17 11:00 | WI170531-4 | 1000 | 29.9 | 1020 | mg/L | 99 | 90 | 110 | | | |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Inorganic Extended Qualifier Report

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38417***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38417-01** | WG427972 | Carbon, total organic (TOC) | SM5310B | Q5 | Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory. |
| | | | SM5310B | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-1

ACZ Sample ID: *L38417-01*
Date Sampled: *07/12/17 12:00*
Date Received: *07/13/17*
Sample Matrix: *Waste Water*

## Base Neutral Acid Extractables by GC/MS

Analysis Method: **M8270C GC/MS**
Extract Method: **M3520C**

Workgroup: WG427395
Analyst: itm
Extract Date: 07/17/17 13:34
Analysis Date: 07/21/17 17:30

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 120-82-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| 1,2-Dichlorobenzene | 95-50-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| 1,3-Dichlorobenzene | 541-73-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| 1,4-Dichlorobenzene | 106-46-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| 1,4-Dioxane | 123-91-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2,4,5-Trichlorophenol | 95-95-4 | | U | 1.2 | * | ug/L | 10 | 60 |
| 2,4,6-Trichlorophenol | 88-06-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2,4-Dichlorophenol | 120-83-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2,4-Dimethylphenol | 105-67-9 | | U | 1.2 | * | ug/L | 5 | 20 |
| 2,4-Dinitrophenol | 51-28-5 | | U | 1.2 | * | ug/L | 20 | 60 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2,6-Dinitrotoluene | 606-20-8 | | U | 1.2 | * | ug/L | 10 | 60 |
| 2-Chloronaphthalene | 91-58-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2-Chlorophenol | 95-57-8 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2-Methylnaphthalene | 91-57-6 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2-Methylphenol | 95-48-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| 2-Nitroaniline | 88-74-4 | | U | 1.2 | * | ug/L | 10 | 60 |
| 2-Nitrophenol | 88-75-5 | | U | 1.2 | * | ug/L | 5 | 20 |
| 3- & 4-Methylphenol | 1319-77-3 | | U | 1.2 | * | ug/L | 5 | 20 |
| 3,3-Dichlorobenzidine | 91-94-1 | | U | 1.2 | * | ug/L | 20 | 60 |
| 3-Nitroaniline | 99-09-2 | | U | 1.2 | * | ug/L | 10 | 60 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | | U | 1.2 | * | ug/L | 10 | 60 |
| 4-Bromophenyl phenyl ether | 101-55-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| 4-Chloro-3-methylphenol | 59-50-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| 4-Chloroaniline | 106-47-8 | | U | 1.2 | * | ug/L | 2 | 10 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| 4-Nitroaniline | 100-01-6 | | U | 1.2 | * | ug/L | 10 | 60 |
| 4-Nitrophenol | 100-02-07 | | U | 1.2 | * | ug/L | 10 | 60 |
| Acenaphthene | 83-32-9 | | U | 1.2 | * | ug/L | 2 | 10 |
| Acenaphthylene | 208-96-8 | | U | 1.2 | * | ug/L | 2 | 10 |
| Aniline | 62-53-3 | | U | 1.2 | * | ug/L | 10 | 60 |
| Anthracene | 120-12-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| Azobenzene | 103-33-3 | | U | 1.2 | * | ug/L | 10 | 60 |
| Benzidine | 92-87-5 | | U | 1.2 | * | ug/L | 5 | 20 |
| Benzo(a)anthracene | 56-55-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| Benzo(a)pyrene | 50-32-8 | | U | 1.2 | * | ug/L | 2 | 10 |
| Benzo(b)fluoranthene | 205-99-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| Benzo(g,h,i)perylene | 191-24-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| Benzo(k)fluoranthene | 207-08-9 | | U | 1.2 | * | ug/L | 2 | 10 |
| Benzoic Acid | 65-85-0 | | U | 1.2 | * | ug/L | 20 | 60 |
| Benzyl alcohol | 100-51-6 | | U | 1.2 | * | ug/L | 2 | 10 |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-1

ACZ Sample ID: *L38417-01*
Date Sampled: *07/12/17 12:00*
Date Received: *07/13/17*
Sample Matrix: *Waste Water*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | 111-91-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| Bis(2-chloroethyl) ether | 111-44-4 | | U | 1.2 | * | ug/L | 2 | 10 |
| Bis(2-chloroisopropyl) ether | 108-60-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| Bis(2-ethylhexyl) phthalate | 117-81-7 | | U | 1.2 | * | ug/L | 5 | 20 |
| Butyl benzyl phthalate | 85-68-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| Chrysene | 218-01-9 | | U | 1.2 | * | ug/L | 2 | 10 |
| Dibenzo(a,h)anthracene | 53-70-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| Dibenzofuran | 132-64-9 | | U | 1.2 | * | ug/L | 2 | 10 |
| Diethylphthalate | 84-66-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| Dimethyl phthalate | 131-11-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| Di-n-butyl phthalate | 84-74-2 | | U | 1.2 | * | ug/L | 2 | 10 |
| Di-n-octyl phthalate | 117-84-0 | | U | 1.2 | * | ug/L | 2 | 10 |
| Fluoranthene | 206-44-0 | | U | 1.2 | * | ug/L | 2 | 10 |
| Fluorene | 86-73-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| Hexachlorobenzene | 118-74-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| Hexachlorobutadiene | 87-68-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| Hexachlorocyclopentadiene | 77-47-4 | | U | 1.2 | * | ug/L | 5 | 20 |
| Hexachloroethane | 67-72-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | | U | 1.2 | * | ug/L | 2 | 10 |
| Isophorone | 78-59-1 | | U | 1.2 | * | ug/L | 2 | 10 |
| Naphthalene | 91-20-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| Nitrobenzene | 98-95-3 | | U | 1.2 | * | ug/L | 2 | 10 |
| N-Nitrosodimethylamine | 62-75-9 | | U | 1.2 | * | ug/L | 10 | 60 |
| N-Nitrosodi-n-propylamine | 621-64-7 | | U | 1.2 | * | ug/L | 2 | 10 |
| N-Nitrosodiphenylamine | 86-30-6 | | U | 1.2 | * | ug/L | 2 | 10 |
| Pentachlorophenol | 87-86-5 | | U | 1.2 | * | ug/L | 10 | 60 |
| Phenanthrene | 85-01-8 | | U | 1.2 | * | ug/L | 2 | 10 |
| Phenol | 108-95-2 | | U | 1.2 | * | ug/L | 5 | 20 |
| Pyrene | 129-00-0 | | U | 1.2 | * | ug/L | 2 | 10 |
| **Surrogate Recoveries** | **CAS** | **% Recovery** | | **Dilution** | **XQ** | **Units** | **LCL** | **UCL** |
| 2,4,6-Tribromophenol | 118-79-6 | 92.8 | | 1.2 | * | % | 40 | 125 |
| 2-Fluorobiphenyl | 321-60-8 | 78.9 | | 1.2 | * | % | 50 | 110 |
| 2-Fluorophenol | 367-12-4 | 49.6 | | 1.2 | * | % | 54 | 100 |
| Nitrobenzene-d5 | 4165-60-0 | 71.1 | | 1.2 | * | % | 40 | 110 |
| Phenol-d6 | 13127-88-3 | 58.8 | | 1.2 | * | % | 47 | 113 |
| Terphenyl-d14 | 1718-51-0 | 73.6 | | 1.2 | * | % | 50 | 135 |

**Arizona license number: AZ0102**

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *LCL* | Lower Control Limit |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *UCL* | Upper Control Limit |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *SURR* | Surrogate | *LFM* | Laboratory Fortified Matrix |
| *INTS* | Internal Standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *LCSS* | Laboratory Control Sample - Soil | *MS/MSD* | Matrix Spike/Matrix Spike Duplicate |
| *LCSW* | Laboratory Control Sample - Water | *PBS* | Prep Blank - Soil |
| *LFB* | Laboratory Fortified Blank | *PBW* | Prep Blank - Water |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| O | Analyte concentration is estimated due to result exceeding calibration range. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
(3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38417***

## Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

**WG427395**

**MS** **Sample ID: L38390-01MS** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 15:50**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | U | 25 | ug/L | 53.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | U | 28.6 | ug/L | 61.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | U | 34.9 | ug/L | 74.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | U | 50.1 | ug/L | 71.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | U | 61.1 | ug/L | 86.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | U | 67 | ug/L | 95.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | U | 24.5 | ug/L | 52.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | U | 35.7 | ug/L | 76.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | U | 31 | ug/L | 44.0 | 40 | 115 | | | |
| PHENOL | 75060 | U | 52.7 | ug/L | 74.0 | 0 | 115 | | | |
| PYRENE | 50003 | U | U | ug/L | 0.0 | 50 | 130 | | | M2 |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 77.9 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 61.0 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.0 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 79.2 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 83.8 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 10.1 | 50 | 135 | | | S6 |

**DUP** **Sample ID: L38391-01DUP** **Analyzed: 07/21/17 16:57**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,2-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,3-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DICHLOROBENZENE | | U | 4 | ug/L | | | | 200 | 20 | RA |
| 1,4-DIOXANE | | 12 | 12.4 | ug/L | | | | 3 | 20 | RA |
| 2,4,5-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DIMETHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,6-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLORONAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLNAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3- & 4-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3,3-DICHLOROBENZIDINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 3-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 4,6-DINITRO-2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-BROMOPHENYL PHENYL ETHER | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLORO-3-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4-CHLOROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLOROPHENYL PHENYL ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| ANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| AZOBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZIDINE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(B)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(G,H,I)PERYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(K)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZOIC ACID | U | U | ug/L | | | | 0 | 20 | RA |
| BENZYL ALCOHOL | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHOXY)METHANE | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROISOPROPYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| BUTYL BENZYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| CHRYSENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZO(A,H)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZOFURAN | U | U | ug/L | | | | 0 | 20 | RA |
| DIETHYLPHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DIMETHYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-BUTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-OCTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBUTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROCYCLOPENTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROETHANE | U | U | ug/L | | | | 0 | 20 | RA |
| INDENO(1,2,3-CD)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| ISOPHORONE | U | U | ug/L | | | | 0 | 20 | RA |
| NAPHTHALENE | U | U | ug/L | | | | 0 | 20 | RA |
| NITROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIMETHYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODI-N-PROPYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIPHENYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| PENTACHLOROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PHENANTHRENE | U | U | ug/L | | | | 0 | 20 | RA |
| PHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRIBROMOPHENOL (surr) | | | % | 94.5 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | % | 76.0 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | % | 71.5 | 54 | 100 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| NITROBENZENE-D5 (surr) | % | 77.3 | 40 | 110 | | |
| PHENOL-D6 (surr) | % | 83.6 | 47 | 113 | | |
| TERPHENYL-D14 (surr) | % | 20.4 | 50 | 135 | | S6 |

**LCSW** **Sample ID: WG426931LCSW** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 14:10**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 33.2 | ug/L | 66.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | | 31.7 | ug/L | 63.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | | 43.3 | ug/L | 87.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | | 53.5 | ug/L | 71.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 58.4 | ug/L | 78.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | | 59 | ug/L | 79.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | | 38 | ug/L | 76.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 38.4 | ug/L | 77.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | | 55 | ug/L | 73.0 | 40 | 115 | | | |
| PHENOL | 75060 | | 53.4 | ug/L | 71.0 | 0 | 115 | | | |
| PYRENE | 50003 | | 41.7 | ug/L | 83.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 90.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 79.8 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 72.8 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.1 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 80.5 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 95.3 | 50 | 135 | | | |

**LCSWD** **Sample ID: WG426931LCSWD** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 14:44**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 35.1 | ug/L | 70.0 | 35 | 105 | 6 | 20 | |
| 1,4-DICHLOROBENZENE | 50013 | | 34.5 | ug/L | 69.0 | 30 | 100 | 8 | 20 | |
| 2,4-DINITROTOLUENE | 50013 | | 44.1 | ug/L | 88.0 | 50 | 120 | 2 | 20 | |
| 2-CHLOROPHENOL | 75080 | | 56.5 | ug/L | 75.0 | 35 | 105 | 5 | 20 | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 60 | ug/L | 80.0 | 45 | 110 | 3 | 20 | |
| 4-NITROPHENOL | 75120 | | 58 | ug/L | 77.0 | 0 | 125 | 2 | 20 | |
| ACENAPHTHENE | 50007 | | 40.4 | ug/L | 81.0 | 45 | 110 | 6 | 20 | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 40.6 | ug/L | 81.0 | 35 | 130 | 6 | 20 | |
| PENTACHLOROPHENOL | 75040 | | 56 | ug/L | 75.0 | 40 | 115 | 2 | 20 | |
| PHENOL | 75060 | | 54.6 | ug/L | 73.0 | 0 | 115 | 2 | 20 | |
| PYRENE | 50003 | | 42.6 | ug/L | 85.0 | 50 | 130 | 2 | 20 | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 88.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 80.6 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.6 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.5 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 77.1 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 93.7 | 50 | 135 | | | |

**PBW** **Sample ID: WG426931PBW** **Analyzed: 07/21/17 13:37**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,2-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,3-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |

| | | | | |
|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | U | ug/L | -10 | 10 |
| 1,4-DIOXANE | U | ug/L | -10 | 10 |
| 2,4,5-TRICHLOROPHENOL | U | ug/L | -50 | 50 |
| 2,4,6-TRICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DIMETHYLPHENOL | U | ug/L | -20 | 20 |
| 2,4-DINITROPHENOL | U | ug/L | -50 | 50 |
| 2,4-DINITROTOLUENE | U | ug/L | -10 | 10 |
| 2,6-DINITROTOLUENE | U | ug/L | -50 | 50 |
| 2-CHLORONAPHTHALENE | U | ug/L | -10 | 10 |
| 2-CHLOROPHENOL | U | ug/L | -10 | 10 |
| 2-METHYLNAPHTHALENE | U | ug/L | -10 | 10 |
| 2-METHYLPHENOL | U | ug/L | -10 | 10 |
| 2-NITROANILINE | U | ug/L | -50 | 50 |
| 2-NITROPHENOL | U | ug/L | -20 | 20 |
| 3- & 4-METHYLPHENOL | U | ug/L | -20 | 20 |
| 3,3-DICHLOROBENZIDINE | U | ug/L | -50 | 50 |
| 3-NITROANILINE | U | ug/L | -50 | 50 |
| 4,6-DINITRO-2-METHYLPHENOL | U | ug/L | -50 | 50 |
| 4-BROMOPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-CHLORO-3-METHYLPHENOL | U | ug/L | -10 | 10 |
| 4-CHLOROANILINE | U | ug/L | -10 | 10 |
| 4-CHLOROPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-NITROANILINE | U | ug/L | -50 | 50 |
| 4-NITROPHENOL | U | ug/L | -50 | 50 |
| ACENAPHTHENE | U | ug/L | -10 | 10 |
| ACENAPHTHYLENE | U | ug/L | -10 | 10 |
| ANILINE | U | ug/L | -50 | 50 |
| ANTHRACENE | U | ug/L | -10 | 10 |
| AZOBENZENE | U | ug/L | -50 | 50 |
| BENZIDINE | U | ug/L | -20 | 20 |
| BENZO(A)ANTHRACENE | U | ug/L | -10 | 10 |
| BENZO(A)PYRENE | U | ug/L | -10 | 10 |
| BENZO(B)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZO(G,H,I)PERYLENE | U | ug/L | -10 | 10 |
| BENZO(K)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZOIC ACID | U | ug/L | -50 | 50 |
| BENZYL ALCOHOL | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHOXY)METHANE | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-CHLOROISOPROPYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | ug/L | -20 | 20 |
| BUTYL BENZYL PHTHALATE | U | ug/L | -10 | 10 |
| CHRYSENE | U | ug/L | -10 | 10 |
| DIBENZO(A,H)ANTHRACENE | U | ug/L | -10 | 10 |
| DIBENZOFURAN | U | ug/L | -10 | 10 |
| DIETHYLPHTHALATE | U | ug/L | -10 | 10 |
| DIMETHYL PHTHALATE | U | ug/L | -10 | 10 |
| DI-N-BUTYL PHTHALATE | U | ug/L | -10 | 10 |

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38417***

| | | | | | |
|---|---|---|---|---|---|
| DI-N-OCTYL PHTHALATE | U | ug/L | | -10 | 10 |
| FLUORANTHENE | U | ug/L | | -10 | 10 |
| FLUORENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBENZENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBUTADIENE | U | ug/L | | -10 | 10 |
| HEXACHLOROCYCLOPENTADIENE | U | ug/L | | -20 | 20 |
| HEXACHLOROETHANE | U | ug/L | | -10 | 10 |
| INDENO(1,2,3-CD)PYRENE | U | ug/L | | -10 | 10 |
| ISOPHORONE | U | ug/L | | -10 | 10 |
| NAPHTHALENE | U | ug/L | | -10 | 10 |
| NITROBENZENE | U | ug/L | | -10 | 10 |
| N-NITROSODIMETHYLAMINE | U | ug/L | | -50 | 50 |
| N-NITROSODI-N-PROPYLAMINE | U | ug/L | | -10 | 10 |
| N-NITROSODIPHENYLAMINE | U | ug/L | | -10 | 10 |
| PENTACHLOROPHENOL | U | ug/L | | -50 | 50 |
| PHENANTHRENE | U | ug/L | | -10 | 10 |
| PHENOL | U | ug/L | | -20 | 20 |
| PYRENE | U | ug/L | | -10 | 10 |
| 2,4,6-TRIBROMOPHENOL (surr) | | % | 77.4 | 40 | 125 |
| 2-FLUOROBIPHENYL (surr) | | % | 74.9 | 50 | 110 |
| 2-FLUOROPHENOL (surr) | | % | 71.1 | 54 | 100 |
| NITROBENZENE-D5 (surr) | | % | 77.2 | 40 | 110 |
| PHENOL-D6 (surr) | | % | 77.3 | 47 | 113 |
| TERPHENYL-D14 (surr) | | % | 91.2 | 50 | 135 |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Organic Extended Qualifier Report

ACZ Project ID: ***L38417***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38417-01** | WG427395 | *All Compounds* | M8270C GC/MS | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | | 2-Fluorophenol | M8270C GC/MS | S7 | Surrogate recovery was below laboratory and method acceptance limits. Unable to confirm matrix effect. |
| | | Pyrene | M8270C GC/MS | M2 | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable. |

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

| | |
|---|---|
| 1,4-Dioxane | M8270C GC/MS |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38417
Date Received: 07/13/2017 10:20
Received By:
Date Printed: 7/13/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | X | | |

A change was made in the Analyses Requested Line 2 and Total No. of Cont. Line 1 section prior to ACZ custody.

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | | X | |

L38417-01 Container B1861587 (YELLOW GLASS): Added 2 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.

| | | | |
|---|---|---|---|
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | | X |
| 15) Are all sample containers appropriate for analytical requirements? | | X | |

L38417-01 : A Yellow Glass container not received and a new container created from the Amber .

| | | | |
|---|---|---|---|
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 4003 | 1.2 | <=6.0 | 13 | Yes |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Sample Receipt**

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38417
Date Received: 07/13/2017 10:20
Received By:
Date Printed: 7/13/2017

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38417-1708041322

L38417

L38417 Chain of Custody **RECORD**

**Batch:**

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

Telephone: (970) 226-5500
Facsimile: (

PAGE ___ OF ___

| EC USE ONLY Client No | CLIENT: | **Stratus Companies - ACZ** | | | | | | SAMPLER Name: James Stewart |
|---|---|---|---|---|---|---|---|---|
| Sample No. S10- | SAMPLE COLLECTION INFO Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | Signature: ANALYSES REQUESTED |
| | 7.12.17 | 12:00 | G | MW-1 | WW | | 3 | Method 8270 (see back of COC) - ACZ [redacted] |
| | | | | | | | | Total Organic Carbon - ACZ |

Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory? Leaving this field blank implies that the incoming temperature is not requested.

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.12.17 16:30 | | 7.12.17 16:30 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | 7-13-17 1000 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

PWSID #

Sample Kit Sent? Yes / No

REPORT TO: PHONE: FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

-TOC sample received unpreserved

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Analytical Report

August 10, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Project ID:
ACZ Project ID: L38581

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38581. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38581. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 09, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-2R

ACZ Sample ID: *L38581-01*
Date Sampled: *07/17/17 15:00*
Date Received: *07/20/17*
Sample Matrix: *Waste Water*

Inorganic Prep

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Phenol | 420.4, Manual Distillation | | | | | | | | 08/08/17 14:15 | wtc |

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 1 | 31.5 | | * | mg/L | 1 | 5 | 08/01/17 11:00 | bce |
| Phenol | 420.4, Manual Distillation | 1 | 0.006 | B | * | mg/L | 0.003 | 0.02 | 08/09/17 11:19 | wtc |

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38581***

**Carbon, total organic (TOC)** SM5310B

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG427972** | | | | | | | | | | | | | |
| WG427972ICV | ICV | 08/01/17 11:00 | WI170707-1 | 100 | | 104 | mg/L | 104 | 90 | 110 | | | |
| WG427972ICB | ICB | 08/01/17 11:00 | | | | U | mg/L | | -3 | 3 | | | |
| WG427972LFB | LFB | 08/01/17 11:00 | WI170531-4 | 50 | | 49.2 | mg/L | 98 | 90 | 110 | | | |
| L38390-01DUP | DUP | 08/01/17 11:00 | | | 87.3 | 91.6 | mg/L | | | | 5 | 20 | RA |
| L38391-01AS | AS | 08/01/17 11:00 | WI170531-4 | 1000 | 29.9 | 1020 | mg/L | 99 | 90 | 110 | | | |

**Phenol** 420.4, Manual Distillation

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG428589** | | | | | | | | | | | | | |
| WG428589ICV | ICV | 08/09/17 11:13 | WI170808-6 | .1506 | | .1538 | mg/L | 102 | 90 | 110 | | | |
| WG428589ICB | ICB | 08/09/17 11:14 | | | | U | mg/L | | -0.003 | 0.003 | | | |
| WG428483LRB | LRB | 08/09/17 11:15 | | | | U | mg/L | | -0.003 | 0.003 | | | |
| WG428483LFB | LFB | 08/09/17 11:17 | WI170808-3 | .0996 | | .1058 | mg/L | 106 | 90 | 110 | | | |
| L38581-01DUP | DUP | 08/09/17 11:20 | | | .006 | .0049 | mg/L | | | | 20 | 20 | RA |
| L38899-02LFM | LFM | 08/09/17 11:22 | WI170808-3 | .0996 | .006 | .1095 | mg/L | 104 | 90 | 110 | | | |

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38581***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38581-01** | WG427972 | Carbon, total organic (TOC) | SM5310B | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | WG428589 | Phenol | 420.4, Manual Distillation | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-2R

ACZ Sample ID: ***L38581-01***
Date Sampled: *07/17/17 15:00*
Date Received: *07/20/17*
Sample Matrix: *Waste Water*

## Base Neutral Acid Extractables by GC/MS

Analysis Method: **M8270C GC/MS**
Extract Method: **M3520C**

Workgroup: WG427792
Analyst: itm
Extract Date: 07/24/17 14:00
Analysis Date: 07/31/17 22:17

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 120-82-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| 1,2-Dichlorobenzene | 95-50-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| 1,3-Dichlorobenzene | 541-73-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| 1,4-Dichlorobenzene | 106-46-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| 1,4-Dioxane | 123-91-1 | 67 | | 0.93 | * | ug/L | 2 | 9 |
| 2,4,5-Trichlorophenol | 95-95-4 | | U | 0.93 | * | ug/L | 9 | 50 |
| 2,4,6-Trichlorophenol | 88-06-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2,4-Dichlorophenol | 120-83-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2,4-Dimethylphenol | 105-67-9 | | U | 0.93 | * | ug/L | 4 | 20 |
| 2,4-Dinitrophenol | 51-28-5 | | U | 0.93 | * | ug/L | 20 | 50 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2,6-Dinitrotoluene | 606-20-8 | | U | 0.93 | * | ug/L | 9 | 50 |
| 2-Chloronaphthalene | 91-58-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2-Chlorophenol | 95-57-8 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2-Methylnaphthalene | 91-57-6 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2-Methylphenol | 95-48-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| 2-Nitroaniline | 88-74-4 | | U | 0.93 | * | ug/L | 9 | 50 |
| 2-Nitrophenol | 88-75-5 | | U | 0.93 | * | ug/L | 4 | 20 |
| 3- & 4-Methylphenol | 1319-77-3 | | U | 0.93 | * | ug/L | 4 | 20 |
| 3,3-Dichlorobenzidine | 91-94-1 | | U | 0.93 | * | ug/L | 20 | 50 |
| 3-Nitroaniline | 99-09-2 | | U | 0.93 | * | ug/L | 9 | 50 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | | U | 0.93 | * | ug/L | 9 | 50 |
| 4-Bromophenyl phenyl ether | 101-55-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| 4-Chloro-3-methylphenol | 59-50-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| 4-Chloroaniline | 106-47-8 | | U | 0.93 | * | ug/L | 2 | 9 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| 4-Nitroaniline | 100-01-6 | | U | 0.93 | * | ug/L | 9 | 50 |
| 4-Nitrophenol | 100-02-07 | | U | 0.93 | * | ug/L | 9 | 50 |
| Acenaphthene | 83-32-9 | | U | 0.93 | * | ug/L | 2 | 9 |
| Acenaphthylene | 208-96-8 | | U | 0.93 | * | ug/L | 2 | 9 |
| Aniline | 62-53-3 | | U | 0.93 | * | ug/L | 9 | 50 |
| Anthracene | 120-12-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| Azobenzene | 103-33-3 | | U | 0.93 | * | ug/L | 9 | 50 |
| Benzidine | 92-87-5 | | U | 0.93 | * | ug/L | 4 | 20 |
| Benzo(a)anthracene | 56-55-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| Benzo(a)pyrene | 50-32-8 | | U | 0.93 | * | ug/L | 2 | 9 |
| Benzo(b)fluoranthene | 205-99-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| Benzo(g,h,i)perylene | 191-24-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| Benzo(k)fluoranthene | 207-08-9 | | U | 0.93 | * | ug/L | 2 | 9 |
| Benzoic Acid | 65-85-0 | | U | 0.93 | * | ug/L | 20 | 50 |
| Benzyl alcohol | 100-51-6 | | U | 0.93 | * | ug/L | 2 | 9 |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-2R

ACZ Sample ID: ***L38581-01***
Date Sampled: *07/17/17 15:00*
Date Received: *07/20/17*
Sample Matrix: *Waste Water*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | 111-91-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| Bis(2-chloroethyl) ether | 111-44-4 | | U | 0.93 | * | ug/L | 2 | 9 |
| Bis(2-chloroisopropyl) ether | 108-60-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| Bis(2-ethylhexyl) phthalate | 117-81-7 | 54 | | 0.93 | * | ug/L | 4 | 20 |
| Butyl benzyl phthalate | 85-68-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| Chrysene | 218-01-9 | | U | 0.93 | * | ug/L | 2 | 9 |
| Dibenzo(a,h)anthracene | 53-70-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| Dibenzofuran | 132-64-9 | | U | 0.93 | * | ug/L | 2 | 9 |
| Diethylphthalate | 84-66-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| Dimethyl phthalate | 131-11-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| Di-n-butyl phthalate | 84-74-2 | | U | 0.93 | * | ug/L | 2 | 9 |
| Di-n-octyl phthalate | 117-84-0 | | U | 0.93 | * | ug/L | 2 | 9 |
| Fluoranthene | 206-44-0 | | U | 0.93 | * | ug/L | 2 | 9 |
| Fluorene | 86-73-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| Hexachlorobenzene | 118-74-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| Hexachlorobutadiene | 87-68-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| Hexachlorocyclopentadiene | 77-47-4 | | U | 0.93 | * | ug/L | 4 | 20 |
| Hexachloroethane | 67-72-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | | U | 0.93 | * | ug/L | 2 | 9 |
| Isophorone | 78-59-1 | | U | 0.93 | * | ug/L | 2 | 9 |
| Naphthalene | 91-20-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| Nitrobenzene | 98-95-3 | | U | 0.93 | * | ug/L | 2 | 9 |
| N-Nitrosodimethylamine | 62-75-9 | | U | 0.93 | * | ug/L | 9 | 50 |
| N-Nitrosodi-n-propylamine | 621-64-7 | | U | 0.93 | * | ug/L | 2 | 9 |
| N-Nitrosodiphenylamine | 86-30-6 | | U | 0.93 | * | ug/L | 2 | 9 |
| Pentachlorophenol | 87-86-5 | | U | 0.93 | * | ug/L | 9 | 50 |
| Phenanthrene | 85-01-8 | | U | 0.93 | * | ug/L | 2 | 9 |
| Phenol | 108-95-2 | | U | 0.93 | * | ug/L | 4 | 20 |
| Pyrene | 129-00-0 | | U | 0.93 | * | ug/L | 2 | 9 |
| **Surrogate Recoveries** | **CAS** | **% Recovery** | | **Dilution** | **XQ** | **Units** | **LCL** | **UCL** |
| 2,4,6-Tribromophenol | 118-79-6 | 96.5 | | 0.93 | * | % | 40 | 125 |
| 2-Fluorobiphenyl | 321-60-8 | 76.9 | | 0.93 | * | % | 50 | 110 |
| 2-Fluorophenol | 367-12-4 | 58.9 | | 0.93 | * | % | 54 | 100 |
| Nitrobenzene-d5 | 4165-60-0 | 67.4 | | 0.93 | * | % | 40 | 110 |
| Phenol-d6 | 13127-88-3 | 73.8 | | 0.93 | * | % | 47 | 113 |
| Terphenyl-d14 | 1718-51-0 | 67.8 | | 0.93 | * | % | 50 | 135 |

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *LCL* | Lower Control Limit |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *UCL* | Upper Control Limit |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *SURR* | Surrogate | *LFM* | Laboratory Fortified Matrix |
| *INTS* | Internal Standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *LCSS* | Laboratory Control Sample - Soil | *MS/MSD* | Matrix Spike/Matrix Spike Duplicate |
| *LCSW* | Laboratory Control Sample - Water | *PBS* | Prep Blank - Soil |
| *LFB* | Laboratory Fortified Blank | *PBW* | Prep Blank - Water |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| O | Analyte concentration is estimated due to result exceeding calibration range. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


| | |
|---|---|
| (1) | EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983. |
| (2) | EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990. |
| (3) | EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990. |
| (4) | EPA SW-846. Test Methods for Evaluating Solid Waste. |
| (5) | Standard Methods for the Examination of Water and Wastewater. |


## Comments

| | |
|---|---|
| (1) | QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations. |
| (2) | Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis. |
| (3) | An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result. |
| (4) | If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit. |

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38581***

## Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

**WG427792**

**MS** **Sample ID: L38578-01MS** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/31/17 20:38**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | U | 29.1 | ug/L | 63.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | U | 28.4 | ug/L | 61.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | U | 38.5 | ug/L | 83.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | U | 46.9 | ug/L | 67.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | U | 50 | ug/L | 72.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | U | 54.5 | ug/L | 78.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | U | 33.6 | ug/L | 73.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | U | 32.9 | ug/L | 71.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | U | 55 | ug/L | 79.0 | 40 | 115 | | | |
| PHENOL | 75060 | U | 47 | ug/L | 68.0 | 0 | 115 | | | |
| PYRENE | 50003 | U | 39.3 | ug/L | 85.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 89.1 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 73.6 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 65.5 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 76.0 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 74.1 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 95.3 | 50 | 135 | | | |

**DUP** **Sample ID: L38579-01DUP** **Analyzed: 07/31/17 21:44**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,2-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,3-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DIOXANE | | | U | ug/L | | | | 0 | 20 | RA |
| 2,4,5-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DIMETHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,6-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLORONAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLNAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3- & 4-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3,3-DICHLOROBENZIDINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 3-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 4,6-DINITRO-2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-BROMOPHENYL PHENYL ETHER | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLORO-3-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4-CHLOROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLOROPHENYL PHENYL ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| ANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| AZOBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZIDINE | | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(B)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(G,H,I)PERYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(K)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZOIC ACID | U | U | ug/L | | | | 0 | 20 | RA |
| BENZYL ALCOHOL | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHOXY)METHANE | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROISOPROPYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-ETHYLHEXYL) PHTHALATE | 41 | 7.1 | ug/L | | | | 141 | 20 | RA |
| BUTYL BENZYL PHTHALATE | 17 | U | ug/L | | | | 200 | 20 | RA |
| CHRYSENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZO(A,H)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZOFURAN | U | U | ug/L | | | | 0 | 20 | RA |
| DIETHYLPHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DIMETHYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-BUTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-OCTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBUTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROCYCLOPENTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROETHANE | U | U | ug/L | | | | 0 | 20 | RA |
| INDENO(1,2,3-CD)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| ISOPHORONE | U | U | ug/L | | | | 0 | 20 | RA |
| NAPHTHALENE | U | U | ug/L | | | | 0 | 20 | RA |
| NITROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIMETHYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODI-N-PROPYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIPHENYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| PENTACHLOROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PHENANTHRENE | U | U | ug/L | | | | 0 | 20 | RA |
| PHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRIBROMOPHENOL (surr) | | | % | 96.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | % | 80.6 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | % | 70.4 | 54 | 100 | | | |

| | | | | | |
|---|---|---|---|---|---|
| NITROBENZENE-D5 (surr) | % | 81.3 | 40 | 110 | |
| PHENOL-D6 (surr) | % | 79.3 | 47 | 113 | |
| TERPHENYL-D14 (surr) | % | 65.9 | 50 | 135 | |

**LCSW** **Sample ID: WG427415LCSW** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/31/17 18:58**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 31.5 | ug/L | 63.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | | 31.2 | ug/L | 62.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | | 39.5 | ug/L | 79.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | | 51 | ug/L | 68.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 52.4 | ug/L | 70.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | | 53 | ug/L | 71.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | | 34.6 | ug/L | 69.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 35.9 | ug/L | 72.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | | 51 | ug/L | 68.0 | 40 | 115 | | | |
| PHENOL | 75060 | | 51.9 | ug/L | 69.0 | 0 | 115 | | | |
| PYRENE | 50003 | | 38.8 | ug/L | 78.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 81.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 71.8 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.2 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 77.9 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 77.7 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 90.4 | 50 | 135 | | | |

**LCSWD** **Sample ID: WG427415LCSWD** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/31/17 19:31**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 33.4 | ug/L | 67.0 | 35 | 105 | 6 | 20 | |
| 1,4-DICHLOROBENZENE | 50013 | | 32.2 | ug/L | 64.0 | 30 | 100 | 3 | 20 | |
| 2,4-DINITROTOLUENE | 50013 | | 44 | ug/L | 88.0 | 50 | 120 | 11 | 20 | |
| 2-CHLOROPHENOL | 75080 | | 54 | ug/L | 72.0 | 35 | 105 | 6 | 20 | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 56.2 | ug/L | 75.0 | 45 | 110 | 7 | 20 | |
| 4-NITROPHENOL | 75120 | | 59 | ug/L | 79.0 | 0 | 125 | 11 | 20 | |
| ACENAPHTHENE | 50007 | | 39.1 | ug/L | 78.0 | 45 | 110 | 12 | 20 | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 38.7 | ug/L | 77.0 | 35 | 130 | 8 | 20 | |
| PENTACHLOROPHENOL | 75040 | | 57 | ug/L | 76.0 | 40 | 115 | 11 | 20 | |
| PHENOL | 75060 | | 54.7 | ug/L | 73.0 | 0 | 115 | 5 | 20 | |
| PYRENE | 50003 | | 44.2 | ug/L | 88.0 | 50 | 130 | 13 | 20 | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 86.5 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 76.9 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 68.5 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 78.7 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 77.4 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 95.7 | 50 | 135 | | | |

**PBW** **Sample ID: WG427415PBW** **Analyzed: 07/31/17 18:25**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,2-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,3-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |

| | | | | |
|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | U | ug/L | -10 | 10 |
| 1,4-DIOXANE | U | ug/L | -10 | 10 |
| 2,4,5-TRICHLOROPHENOL | U | ug/L | -50 | 50 |
| 2,4,6-TRICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DIMETHYLPHENOL | U | ug/L | -20 | 20 |
| 2,4-DINITROPHENOL | U | ug/L | -50 | 50 |
| 2,4-DINITROTOLUENE | U | ug/L | -10 | 10 |
| 2,6-DINITROTOLUENE | U | ug/L | -50 | 50 |
| 2-CHLORONAPHTHALENE | U | ug/L | -10 | 10 |
| 2-CHLOROPHENOL | U | ug/L | -10 | 10 |
| 2-METHYLNAPHTHALENE | U | ug/L | -10 | 10 |
| 2-METHYLPHENOL | U | ug/L | -10 | 10 |
| 2-NITROANILINE | U | ug/L | -50 | 50 |
| 2-NITROPHENOL | U | ug/L | -20 | 20 |
| 3- & 4-METHYLPHENOL | U | ug/L | -20 | 20 |
| 3,3-DICHLOROBENZIDINE | U | ug/L | -50 | 50 |
| 3-NITROANILINE | U | ug/L | -50 | 50 |
| 4,6-DINITRO-2-METHYLPHENOL | U | ug/L | -50 | 50 |
| 4-BROMOPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-CHLORO-3-METHYLPHENOL | U | ug/L | -10 | 10 |
| 4-CHLOROANILINE | U | ug/L | -10 | 10 |
| 4-CHLOROPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-NITROANILINE | U | ug/L | -50 | 50 |
| 4-NITROPHENOL | U | ug/L | -50 | 50 |
| ACENAPHTHENE | U | ug/L | -10 | 10 |
| ACENAPHTHYLENE | U | ug/L | -10 | 10 |
| ANILINE | U | ug/L | -50 | 50 |
| ANTHRACENE | U | ug/L | -10 | 10 |
| AZOBENZENE | U | ug/L | -50 | 50 |
| BENZIDINE | U | ug/L | -20 | 20 |
| BENZO(A)ANTHRACENE | U | ug/L | -10 | 10 |
| BENZO(A)PYRENE | U | ug/L | -10 | 10 |
| BENZO(B)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZO(G,H,I)PERYLENE | U | ug/L | -10 | 10 |
| BENZO(K)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZOIC ACID | U | ug/L | -50 | 50 |
| BENZYL ALCOHOL | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHOXY)METHANE | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-CHLOROISOPROPYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | ug/L | -20 | 20 |
| BUTYL BENZYL PHTHALATE | U | ug/L | -10 | 10 |
| CHRYSENE | U | ug/L | -10 | 10 |
| DIBENZO(A,H)ANTHRACENE | U | ug/L | -10 | 10 |
| DIBENZOFURAN | U | ug/L | -10 | 10 |
| DIETHYLPHTHALATE | U | ug/L | -10 | 10 |
| DIMETHYL PHTHALATE | U | ug/L | -10 | 10 |
| DI-N-BUTYL PHTHALATE | U | ug/L | -10 | 10 |

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38581***

| | | | | | |
|---|---|---|---|---|---|
| DI-N-OCTYL PHTHALATE | U | ug/L | | -10 | 10 |
| FLUORANTHENE | U | ug/L | | -10 | 10 |
| FLUORENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBENZENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBUTADIENE | U | ug/L | | -10 | 10 |
| HEXACHLOROCYCLOPENTADIENE | U | ug/L | | -20 | 20 |
| HEXACHLOROETHANE | U | ug/L | | -10 | 10 |
| INDENO(1,2,3-CD)PYRENE | U | ug/L | | -10 | 10 |
| ISOPHORONE | U | ug/L | | -10 | 10 |
| NAPHTHALENE | U | ug/L | | -10 | 10 |
| NITROBENZENE | U | ug/L | | -10 | 10 |
| N-NITROSODIMETHYLAMINE | U | ug/L | | -50 | 50 |
| N-NITROSODI-N-PROPYLAMINE | U | ug/L | | -10 | 10 |
| N-NITROSODIPHENYLAMINE | U | ug/L | | -10 | 10 |
| PENTACHLOROPHENOL | U | ug/L | | -50 | 50 |
| PHENANTHRENE | U | ug/L | | -10 | 10 |
| PHENOL | U | ug/L | | -20 | 20 |
| PYRENE | U | ug/L | | -10 | 10 |
| 2,4,6-TRIBROMOPHENOL (surr) | | % | 80.4 | 40 | 125 |
| 2-FLUOROBIPHENYL (surr) | | % | 74.1 | 50 | 110 |
| 2-FLUOROPHENOL (surr) | | % | 72.9 | 54 | 100 |
| NITROBENZENE-D5 (surr) | | % | 81.7 | 40 | 110 |
| PHENOL-D6 (surr) | | % | 80.1 | 47 | 113 |
| TERPHENYL-D14 (surr) | | % | 89.6 | 50 | 135 |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Organic Extended Qualifier Report

ACZ Project ID: ***L38581***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38581-01** | WG427792 | *All Compounds* | M8270C GC/MS | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

| | |
|---|---|
| 1,4-Dioxane | M8270C GC/MS |

ACZ Laboratories, Inc.
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# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38581
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | X | | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | | X |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 4413 | 0.3 | <=6.0 | 15 | N/A |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
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# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38581
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38581-1708101106

L38581 Chain of Custody

# CUSTODY RECORD

L38581

Batch:

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

Telephone: (970) 226-5500
Facsimile: (



EC USE ONL Client No.

CLIENT: **Stratus Companies - ACZ**

SAMPLER
Name: James Stewart
Signature:

| Sample No. S10- | SAMPLE COLLECTION INFO: Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
|---|---|---|---|---|---|---|---|---|
| | 7.17.17 | 10:08 | G | MW-2R | NW | | 3 | Phenols |
| | | | | | | | | Total Organic Carbon |
| | | | | | | | | Method 8270 (all normal compounds, including those below) |
| | | | | | | | | **Benzyl Butyl Phthalate** |
| | | | | | | | | **Bis(2-ethylhexyl) phthalate** |
| | | | | | | | | **Di-n-butyl Phthalate** |
| | | | | | | | | **Diethyl Phthalate** |
| | | | | | | | | **Dimethyl Phthalate** |
| | | | | | | | | **Di-n-octyl Phthalate** |
| | | | | | | | | **1,4-Dioxane** |
| | | | | | | | | **Benzoic Acid** |
| | | | | | | | | **Bencyl alcohol** |
| | | | | | | | | **2-Methylphenol** |

**Compliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the

**Leaving this field blank implies that the incoming temperature is not requested.**

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.19.17 14:30 | CTF 7/19/17 | 1430 |
| Relinquished by | Date / Time | Received by | Date / Time |
| CTF 7/19/17 | 1630 | BG 7/20/17 | 1133 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

CDPHE REPORT REQUIRED

PWSID #

Sample Kit Sent? Yes / No

REPORT TO: PHONE: FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

# CHAIN OF CUSTODY RECORD

STEWART ENVIRONMENTAL CONSULTANTS, INC.
3801 Automation Way, Suite 200, Fort Collins, CO 80525
Telephone: (970) 226-5500
Facsimile: (970) 226-4946

Batch: 2US6797

PAGE ___ OF ___

SEC USE ONLY
Client No.

CLIENT: **Stratus Companies - Stewart Labs**

SAMPLER
Name: James Stewart
Signature:

| Sample No S10-202 | SAMPLE COLLECTION INFO: Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
|---|---|---|---|---|---|---|---|---|
| 12J | 7.20.17 | 15:30 | G | MW-2R | WW | Y | | ~~Method 8260 (see back of COC) - SL~~ |
| | | | | | | | | ~~Metals - (see back of COC) SL~~ |
| | | | | | | | | ~~Inerganic Analysis (see back of COC) - SL~~ |
| | | | | | | | 1 | **Sulfide** |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

**Compliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory? *Please check*. ____ **Yes**, record and report temperature. ____ **No**, temperature not requested.

**Leaving this field blank implies that the incoming temperature is not requested.**

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.20.17 15:00 | | 7/21/17 11:30 |
| Relinquished by | Date / Time | Received by | Date / Time |
| Relinquished by | Date / Time | Received by | Date / Time |
| Database Entry By: JD-M | | Date: 7/21/17 | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

CDPHE REPORT REQUIRED

PWSID #

Sample Kit Sent? Yes / No

REPORT TO: PHONE: FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Analytical Report

August 04, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Project ID:
ACZ Project ID: L38582

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38582. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38582. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-3

ACZ Sample ID: ***L38582-01***
Date Sampled: *07/17/17 14:00*
Date Received: *07/20/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 1 | 47.1 | | * | mg/L | 1 | 5 | 08/01/17 11:00 | bce |

**Arizona license number: AZ0102**

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REP001.03.15.02

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38582***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38582-01** | WG427972 | Carbon, total organic (TOC) | SM5310B | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

# Certification Qualifiers

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38582***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38582
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | X | | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | | X |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 4413 | 0.3 | <=6.0 | 15 | N/A |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38582
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38582-1708041331

L38582 Chain of Custody

# CHAIN OF CUSTODY RECORD

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

L38582

**Batch:**

Telephone: (970) 226-5500
Facsimile: (



EC USE ONL

Client No:

CLIENT: **Stratus Companies - ACZ**

SAMPLER
Name: James Stewart
Signature:

| Sample No: S10- | SAMPLE COLLECTION INFO: Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | | ~~Phenols~~ |
| | 7.17.17 | 14:00 | | MW-3 | NW | | 1 | Total Organic Carbon |
| | | | | | | | | Method 8270 (all normal compounds, including those below) |
| | | | | | | | | **Benzyl Butyl Phthalate** |
| | | | | | | | | **Bis(2-ethylhexyl) phthalate** |
| | | | | | | | | **Di-n-butyl Phthalate** |
| | | | | | | | | **Diethyl Phthalate** |
| | | | | | | | | **Dimethyl Phthalate** |
| | | | | | | | | **Di-n-octyl Phthalate** |
| | | | | | | | | **1,4-Dioxane** |
| | | | | | | | | **Benzoic Acid** |
| | | | | | | | | **Bencyl alcohol** |
| | | | | | | | | **2-Methylphenol** |

**Compliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the

**Leaving this field blank implies that the incoming temperature is not requested.**

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.19.17 14:30 | 7/19/17 | 1430 |
| Relinquished by | Date / Time | Received by | Date / Time |
| CTF 7/19/17 | 1630 | [illegible] 7/20/17 | 1133 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

CDPHE REPORT REQUIRED

PWSID #

Sample Kit Sent? Yes / No

REPORT TO: PHONE: FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

# CHAIN OF CUSTODY RECORD

**Batch: 215697**

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**
Telephone: (970) 226-5500
Facsimile: (970) 226-4946 PAGE ____ OF ____

| SEC USE ONLY Client No. | CLIENT: **Stratus Companies - Stewart Labs** | | | | | | | SAMPLER Name: James Stewart Signature: |
|---|---|---|---|---|---|---|---|---|
| Sample No. | SAMPLE COLLECTION INFO | | | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
| | Date | Time | Grab / Comp | | | | | |
| S10-202 | 7-20-17 | 15:10 | G | MW-3 | WW | Y | | **Method 8260 (see back of COC) - SL** |
| | | | | | | | | **Metals - (see back of COC) SL** |
| | | | | | | | | **Inorganic Analysis (see back of COC) - SL** |
| | | | | | | 1 | ~~2~~ 1 | **Sulfide** |
| | | | | | | | 1 | CN |

**Compliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory? *Please check*. _____ **Yes**, record and report temperature. _____ **No**, temperature not requested.

**Leaving this field blank implies that the incoming temperature is not requested.**

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7-20-17 19:00 | | 7/21/17 11:30 |
| Relinquished by | Date / Time | Received by | Date / Time |
| Relinquished by | Date / Time | Received by | Date / Time |
| Database Entry By: JDM | | Date: 7/21/17 | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

CDPHE REPORT REQUIRED

**PWSID #**

Sample Kit Sent? Yes / No

| REPORT TO: | PHONE: |
|---|---|
| | FAX: |
| CLIENT: | |
| ADDRESS: | |
| CITY, STATE ZIP: | |
| INVOICE TO: | |
| ADDRESS: | |
| CITY, STATE ZIP: | |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Analytical Report**

August 18, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Project ID:
ACZ Project ID: L38810

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 28, 2017. This project has been assigned to ACZ's project number, L38810. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38810. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 17, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-4

ACZ Sample ID: *L38810-01*
Date Sampled: *07/27/17 12:00*
Date Received: *07/28/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 1 | 41.2 | | * | mg/L | 1 | 5 | 08/02/17 17:31 | bce |

**Arizona license number: AZ0102**

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.


## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38810***

**Carbon, total organic (TOC)** SM5310B

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG427972** | | | | | | | | | | | | | |
| WG427972ICV | ICV | 08/01/17 11:00 | WI170707-1 | 100 | | 104 | mg/L | 104 | 90 | 110 | | | |
| WG427972ICB | ICB | 08/01/17 11:00 | | | | U | mg/L | | -3 | 3 | | | |
| **WG428037** | | | | | | | | | | | | | |
| WG428037LFB | LFB | 08/02/17 17:31 | WI170531-4 | 50 | | 48.1 | mg/L | 96 | 90 | 110 | | | |
| L38710-01DUP | DUP | 08/02/17 17:31 | | | 2.4 | 3.3 | mg/L | | | | 32 | 20 | RA |
| L38710-02AS | AS | 08/02/17 17:31 | WI170531-4 | 50 | 1.1 | 52.8 | mg/L | 103 | 90 | 110 | | | |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Inorganic Extended Qualifier Report

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38810***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38810-01** | WG428037 | Carbon, total organic (TOC) | SM5310B | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-4

ACZ Sample ID: *L38810-01*
Date Sampled: *07/27/17 12:00*
Date Received: *07/28/17*
Sample Matrix: *Waste Water*

## Base Neutral Acid Extractables by GC/MS

Analysis Method: **M8270C GC/MS**
Extract Method: **M3520C**

Workgroup: WG429249
Analyst: itm
Extract Date: 08/02/17 16:32
Analysis Date: 08/16/17 15:52

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 120-82-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| 1,2-Dichlorobenzene | 95-50-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| 1,3-Dichlorobenzene | 541-73-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| 1,4-Dichlorobenzene | 106-46-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| 1,4-Dioxane | 123-91-1 | 11 | | 0.94 | * | ug/L | 2 | 9 |
| 2,4,5-Trichlorophenol | 95-95-4 | | U | 0.94 | * | ug/L | 9 | 50 |
| 2,4,6-Trichlorophenol | 88-06-2 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2,4-Dichlorophenol | 120-83-2 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2,4-Dimethylphenol | 105-67-9 | | U | 0.94 | * | ug/L | 4 | 20 |
| 2,4-Dinitrophenol | 51-28-5 | | U | 0.94 | * | ug/L | 20 | 50 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2,6-Dinitrotoluene | 606-20-8 | | U | 0.94 | * | ug/L | 9 | 50 |
| 2-Chloronaphthalene | 91-58-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2-Chlorophenol | 95-57-8 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2-Methylnaphthalene | 91-57-6 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2-Methylphenol | 95-48-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| 2-Nitroaniline | 88-74-4 | | U | 0.94 | * | ug/L | 9 | 50 |
| 2-Nitrophenol | 88-75-5 | | U | 0.94 | * | ug/L | 4 | 20 |
| 3- & 4-Methylphenol | 1319-77-3 | | U | 0.94 | * | ug/L | 4 | 20 |
| 3,3-Dichlorobenzidine | 91-94-1 | | U | 0.94 | * | ug/L | 20 | 50 |
| 3-Nitroaniline | 99-09-2 | | U | 0.94 | * | ug/L | 9 | 50 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | | U | 0.94 | * | ug/L | 9 | 50 |
| 4-Bromophenyl phenyl ether | 101-55-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| 4-Chloro-3-methylphenol | 59-50-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| 4-Chloroaniline | 106-47-8 | | U | 0.94 | * | ug/L | 2 | 9 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| 4-Nitroaniline | 100-01-6 | | U | 0.94 | * | ug/L | 9 | 50 |
| 4-Nitrophenol | 100-02-07 | | U | 0.94 | * | ug/L | 9 | 50 |
| Acenaphthene | 83-32-9 | | U | 0.94 | * | ug/L | 2 | 9 |
| Acenaphthylene | 208-96-8 | | U | 0.94 | * | ug/L | 2 | 9 |
| Aniline | 62-53-3 | | U | 0.94 | * | ug/L | 9 | 50 |
| Anthracene | 120-12-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| Azobenzene | 103-33-3 | | U | 0.94 | * | ug/L | 9 | 50 |
| Benzidine | 92-87-5 | | U | 0.94 | * | ug/L | 4 | 20 |
| Benzo(a)anthracene | 56-55-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| Benzo(a)pyrene | 50-32-8 | | U | 0.94 | * | ug/L | 2 | 9 |
| Benzo(b)fluoranthene | 205-99-2 | | U | 0.94 | * | ug/L | 2 | 9 |
| Benzo(g,h,i)perylene | 191-24-2 | | U | 0.94 | * | ug/L | 2 | 9 |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-4

ACZ Sample ID: *L38810-01*
Date Sampled: *07/27/17 12:00*
Date Received: *07/28/17*
Sample Matrix: *Waste Water*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Benzo(k)fluoranthene | 207-08-9 | | U | 0.94 | * | ug/L | 2 | 9 |
| Benzoic Acid | 65-85-0 | | U | 0.94 | * | ug/L | 20 | 50 |
| Benzyl alcohol | 100-51-6 | | U | 0.94 | * | ug/L | 2 | 9 |
| Bis(2-chloroethoxy)methane | 111-91-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| Bis(2-chloroethyl) ether | 111-44-4 | | U | 0.94 | * | ug/L | 2 | 9 |
| Bis(2-chloroisopropyl) ether | 108-60-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| Bis(2-ethylhexyl) phthalate | 117-81-7 | | U | 0.94 | * | ug/L | 4 | 20 |
| Butyl benzyl phthalate | 85-68-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| Chrysene | 218-01-9 | | U | 0.94 | * | ug/L | 2 | 9 |
| Dibenzo(a,h)anthracene | 53-70-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| Dibenzofuran | 132-64-9 | | U | 0.94 | * | ug/L | 2 | 9 |
| Diethylphthalate | 84-66-2 | | U | 0.94 | * | ug/L | 2 | 9 |
| Dimethyl phthalate | 131-11-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| Di-n-butyl phthalate | 84-74-2 | | U | 0.94 | * | ug/L | 2 | 9 |
| Di-n-octyl phthalate | 117-84-0 | | U | 0.94 | * | ug/L | 2 | 9 |
| Fluoranthene | 206-44-0 | | U | 0.94 | * | ug/L | 2 | 9 |
| Fluorene | 86-73-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| Hexachlorobenzene | 118-74-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| Hexachlorobutadiene | 87-68-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| Hexachlorocyclopentadiene | 77-47-4 | | U | 0.94 | * | ug/L | 4 | 20 |
| Hexachloroethane | 67-72-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | | U | 0.94 | * | ug/L | 2 | 9 |
| Isophorone | 78-59-1 | | U | 0.94 | * | ug/L | 2 | 9 |
| Naphthalene | 91-20-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| Nitrobenzene | 98-95-3 | | U | 0.94 | * | ug/L | 2 | 9 |
| N-Nitrosodimethylamine | 62-75-9 | | U | 0.94 | * | ug/L | 9 | 50 |
| N-Nitrosodi-n-propylamine | 621-64-7 | | U | 0.94 | * | ug/L | 2 | 9 |
| N-Nitrosodiphenylamine | 86-30-6 | | U | 0.94 | * | ug/L | 2 | 9 |
| Pentachlorophenol | 87-86-5 | | U | 0.94 | * | ug/L | 9 | 50 |
| Phenanthrene | 85-01-8 | | U | 0.94 | * | ug/L | 2 | 9 |
| Phenol | 108-95-2 | | U | 0.94 | * | ug/L | 4 | 20 |
| Pyrene | 129-00-0 | | U | 0.94 | * | ug/L | 2 | 9 |
| **Surrogate Recoveries** | **CAS** | **% Recovery** | | **Dilution** | **XQ** | **Units** | **LCL** | **UCL** |
| 2,4,6-Tribromophenol | 118-79-6 | 96.4 | | 0.94 | * | % | 40 | 125 |
| 2-Fluorobiphenyl | 321-60-8 | 75.8 | | 0.94 | * | % | 50 | 110 |
| 2-Fluorophenol | 367-12-4 | 65.5 | | 0.94 | * | % | 54 | 100 |
| Nitrobenzene-d5 | 4165-60-0 | 77.4 | | 0.94 | * | % | 40 | 110 |
| Phenol-d6 | 13127-88-3 | 78.7 | | 0.94 | * | % | 47 | 113 |
| Terphenyl-d14 | 1718-51-0 | 65.5 | | 0.94 | * | % | 50 | 135 |

**Arizona license number: AZ0102**

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *LCL* | Lower Control Limit |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *UCL* | Upper Control Limit |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *SURR* | Surrogate | *LFM* | Laboratory Fortified Matrix |
| *INTS* | Internal Standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *LCSS* | Laboratory Control Sample - Soil | *MS/MSD* | Matrix Spike/Matrix Spike Duplicate |
| *LCSW* | Laboratory Control Sample - Water | *PBS* | Prep Blank - Soil |
| *LFB* | Laboratory Fortified Blank | *PBW* | Prep Blank - Water |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| O | Analyte concentration is estimated due to result exceeding calibration range. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.


## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
(3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38810***

## Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

**WG429249**

**MS** **Sample ID: L38809-01MS** **PCN/SCN: OPBNA170523-1** **Analyzed: 08/16/17 15:19**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | U | 27.1 | ug/L | 57.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | U | 25.9 | ug/L | 55.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | U | 35.7 | ug/L | 76.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | U | 44.8 | ug/L | 63.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | U | 53.8 | ug/L | 76.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | U | 55.2 | ug/L | 78.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | U | 35.5 | ug/L | 75.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | U | 33.7 | ug/L | 71.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | U | 60.7 | ug/L | 86.0 | 40 | 115 | | | |
| PHENOL | 75060 | U | 47 | ug/L | 66.0 | 0 | 115 | | | |
| PYRENE | 50003 | U | 36.3 | ug/L | 77.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 88.1 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 77.3 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 61.9 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 76.0 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 71.9 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 78.2 | 50 | 135 | | | |

**DUP** **Sample ID: L38810-01DUP** **Analyzed: 08/16/17 16:25**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,2-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,3-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DIOXANE | | 11 | 10.1 | ug/L | | | | 9 | 20 | RA |
| 2,4,5-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DIMETHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,6-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLORONAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLNAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3- & 4-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3,3-DICHLOROBENZIDINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 3-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 4,6-DINITRO-2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-BROMOPHENYL PHENYL ETHER | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLORO-3-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4-CHLOROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLOROPHENYL PHENYL ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| ANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| AZOBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZIDINE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(B)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(G,H,I)PERYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(K)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZOIC ACID | U | U | ug/L | | | | 0 | 20 | RA |
| BENZYL ALCOHOL | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHOXY)METHANE | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROISOPROPYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| BUTYL BENZYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| CHRYSENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZO(A,H)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZOFURAN | U | U | ug/L | | | | 0 | 20 | RA |
| DIETHYLPHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DIMETHYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-BUTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-OCTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBUTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROCYCLOPENTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROETHANE | U | U | ug/L | | | | 0 | 20 | RA |
| INDENO(1,2,3-CD)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| ISOPHORONE | U | U | ug/L | | | | 0 | 20 | RA |
| NAPHTHALENE | U | U | ug/L | | | | 0 | 20 | RA |
| NITROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIMETHYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODI-N-PROPYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIPHENYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| PENTACHLOROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PHENANTHRENE | U | U | ug/L | | | | 0 | 20 | RA |
| PHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRIBROMOPHENOL (surr) | | | % | 92.6 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | % | 70.3 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | % | 59.7 | 54 | 100 | | | |

| | | | | | |
|---|---|---|---|---|---|
| NITROBENZENE-D5 (surr) | % | 72.0 | 40 | 110 | |
| PHENOL-D6 (surr) | % | 73.7 | 47 | 113 | |
| TERPHENYL-D14 (surr) | % | 60.8 | 50 | 135 | |

**LCSW** **Sample ID: WG428109LCSW** **PCN/SCN: OPBNA170523-1** **Analyzed: 08/16/17 13:39**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 29.6 | ug/L | 59.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | | 29.4 | ug/L | 59.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | | 39.9 | ug/L | 80.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | | 51 | ug/L | 68.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 55.2 | ug/L | 74.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | | 60 | ug/L | 80.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | | 38.7 | ug/L | 77.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 40.1 | ug/L | 80.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | | 55 | ug/L | 73.0 | 40 | 115 | | | |
| PHENOL | 75060 | | 52.5 | ug/L | 70.0 | 0 | 115 | | | |
| PYRENE | 50003 | | 44.8 | ug/L | 90.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 81.7 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 79.9 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 67.8 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.8 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 75.5 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 107.2 | 50 | 135 | | | |

**LCSWD** **Sample ID: WG428109LCSWD** **PCN/SCN: OPBNA170523-1** **Analyzed: 08/16/17 14:12**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 36 | ug/L | 72.0 | 35 | 105 | 20 | 20 | |
| 1,4-DICHLOROBENZENE | 50013 | | 36.3 | ug/L | 73.0 | 30 | 100 | 21 | 20 | R4 |
| 2,4-DINITROTOLUENE | 50013 | | 43.3 | ug/L | 87.0 | 50 | 120 | 8 | 20 | |
| 2-CHLOROPHENOL | 75080 | | 63.3 | ug/L | 84.0 | 35 | 105 | 22 | 20 | R4 |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 64.2 | ug/L | 86.0 | 45 | 110 | 15 | 20 | |
| 4-NITROPHENOL | 75120 | | 61 | ug/L | 81.0 | 0 | 125 | 2 | 20 | |
| ACENAPHTHENE | 50007 | | 45 | ug/L | 90.0 | 45 | 110 | 15 | 20 | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 47.7 | ug/L | 95.0 | 35 | 130 | 17 | 20 | |
| PENTACHLOROPHENOL | 75040 | | 60 | ug/L | 80.0 | 40 | 115 | 9 | 20 | |
| PHENOL | 75060 | | 61.4 | ug/L | 82.0 | 0 | 115 | 16 | 20 | |
| PYRENE | 50003 | | 45.2 | ug/L | 90.0 | 50 | 130 | 1 | 20 | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 86.9 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 88.5 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 78.0 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 96.9 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 84.1 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 104.4 | 50 | 135 | | | |

**PBW** **Sample ID: WG428109PBW** **Analyzed: 08/16/17 13:06**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,2-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,3-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |

| | | | | |
|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | U | ug/L | -10 | 10 |
| 1,4-DIOXANE | U | ug/L | -10 | 10 |
| 2,4,5-TRICHLOROPHENOL | U | ug/L | -50 | 50 |
| 2,4,6-TRICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DIMETHYLPHENOL | U | ug/L | -20 | 20 |
| 2,4-DINITROPHENOL | U | ug/L | -50 | 50 |
| 2,4-DINITROTOLUENE | U | ug/L | -10 | 10 |
| 2,6-DINITROTOLUENE | U | ug/L | -50 | 50 |
| 2-CHLORONAPHTHALENE | U | ug/L | -10 | 10 |
| 2-CHLOROPHENOL | U | ug/L | -10 | 10 |
| 2-METHYLNAPHTHALENE | U | ug/L | -10 | 10 |
| 2-METHYLPHENOL | U | ug/L | -10 | 10 |
| 2-NITROANILINE | U | ug/L | -50 | 50 |
| 2-NITROPHENOL | U | ug/L | -20 | 20 |
| 3- & 4-METHYLPHENOL | U | ug/L | -20 | 20 |
| 3,3-DICHLOROBENZIDINE | U | ug/L | -50 | 50 |
| 3-NITROANILINE | U | ug/L | -50 | 50 |
| 4,6-DINITRO-2-METHYLPHENOL | U | ug/L | -50 | 50 |
| 4-BROMOPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-CHLORO-3-METHYLPHENOL | U | ug/L | -10 | 10 |
| 4-CHLOROANILINE | U | ug/L | -10 | 10 |
| 4-CHLOROPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-NITROANILINE | U | ug/L | -50 | 50 |
| 4-NITROPHENOL | U | ug/L | -50 | 50 |
| ACENAPHTHENE | U | ug/L | -10 | 10 |
| ACENAPHTHYLENE | U | ug/L | -10 | 10 |
| ANILINE | U | ug/L | -50 | 50 |
| ANTHRACENE | U | ug/L | -10 | 10 |
| AZOBENZENE | U | ug/L | -50 | 50 |
| BENZIDINE | U | ug/L | -20 | 20 |
| BENZO(A)ANTHRACENE | U | ug/L | -10 | 10 |
| BENZO(A)PYRENE | U | ug/L | -10 | 10 |
| BENZO(B)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZO(G,H,I)PERYLENE | U | ug/L | -10 | 10 |
| BENZO(K)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZOIC ACID | U | ug/L | -50 | 50 |
| BENZYL ALCOHOL | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHOXY)METHANE | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-CHLOROISOPROPYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | ug/L | -20 | 20 |
| BUTYL BENZYL PHTHALATE | U | ug/L | -10 | 10 |
| CHRYSENE | U | ug/L | -10 | 10 |
| DIBENZO(A,H)ANTHRACENE | U | ug/L | -10 | 10 |
| DIBENZOFURAN | U | ug/L | -10 | 10 |
| DIETHYLPHTHALATE | U | ug/L | -10 | 10 |
| DIMETHYL PHTHALATE | U | ug/L | -10 | 10 |
| DI-N-BUTYL PHTHALATE | U | ug/L | -10 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| DI-N-OCTYL PHTHALATE | U | ug/L | | -10 | 10 |
| FLUORANTHENE | U | ug/L | | -10 | 10 |
| FLUORENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBENZENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBUTADIENE | U | ug/L | | -10 | 10 |
| HEXACHLOROCYCLOPENTADIENE | U | ug/L | | -20 | 20 |
| HEXACHLOROETHANE | U | ug/L | | -10 | 10 |
| INDENO(1,2,3-CD)PYRENE | U | ug/L | | -10 | 10 |
| ISOPHORONE | U | ug/L | | -10 | 10 |
| NAPHTHALENE | U | ug/L | | -10 | 10 |
| NITROBENZENE | U | ug/L | | -10 | 10 |
| N-NITROSODIMETHYLAMINE | U | ug/L | | -50 | 50 |
| N-NITROSODI-N-PROPYLAMINE | U | ug/L | | -10 | 10 |
| N-NITROSODIPHENYLAMINE | U | ug/L | | -10 | 10 |
| PENTACHLOROPHENOL | U | ug/L | | -50 | 50 |
| PHENANTHRENE | U | ug/L | | -10 | 10 |
| PHENOL | U | ug/L | | -20 | 20 |
| PYRENE | U | ug/L | | -10 | 10 |
| 2,4,6-TRIBROMOPHENOL (surr) | | % | 77.8 | 40 | 125 |
| 2-FLUOROBIPHENYL (surr) | | % | 82.8 | 50 | 110 |
| 2-FLUOROPHENOL (surr) | | % | 68.8 | 54 | 100 |
| NITROBENZENE-D5 (surr) | | % | 86.4 | 40 | 110 |
| PHENOL-D6 (surr) | | % | 76.1 | 47 | 113 |
| TERPHENYL-D14 (surr) | | % | 104.7 | 50 | 135 |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Organic Extended Qualifier Report

ACZ Project ID: ***L38810***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38810-01** | WG429249 | *All Compounds* | M8270C GC/MS | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | | 1,4-Dichlorobenzene | M8270C GC/MS | R4 | RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria. |
| | | 2-Chlorophenol | M8270C GC/MS | R4 | RPD for a spike and spike duplicate exceeded the method or laboratory acceptance limit. At a minimum, one spike recovery met acceptance criteria. |

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

| | |
|---|---|
| 1,4-Dioxane | M8270C GC/MS |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38810
Date Received: 07/28/2017 15:13
Received By:
Date Printed: 7/28/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | X | | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | | X |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 5245 | 0.7 | <=6.0 | 14 | N/A |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38810
Date Received: 07/28/2017 15:13
Received By:
Date Printed: 7/28/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38810-17081813

C38816

# CHAIN OF CUSTODY RECORD

L38810 Chain of Custody

**Batch:**

**STEWART ENVIRONMENTAL CONSULTANTS, INC**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**
Telephone: (970) 226-5500
Facsimile: (



USE ONLY
Client No.

CLIENT: **Stratus Companies - ACZ**

SAMPLER
Name: James Stewart
Signature:

| Sample No. 10- | SAMPLE COLLECTION INFO Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
|---|---|---|---|---|---|---|---|---|
| | 7-27-17 | 12:00 | G | MW-4 | WW | Y | 3 | Phenols |
| | | | | | | | | Total Organic Carbon |
| | | | | | | | | Method 8270 (all normal compounds, including those below) |
| | | | | | | | | **Benzyl Butyl Phthalate** |
| | | | | | | | | **Bis(2-ethylhexyl) phthalate** |
| | | | | | | | | **Di-n-butyl Phthalate** |
| | | | | | | | | **Diethyl Phthalate** |
| | | | | | | | | **Dimethyl Phthalate** |
| | | | | | | | | **Di-n-octyl Phthalate** |
| | | | | | | | | **1,4-Dioxane** |
| | | | | | | | | **Benzoic Acid** |
| | | | | | | | | **Bencyl alcohol** |
| | | | | | | | | **2-Methylphenol** |

**mpliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the
**eaving this field blank implies that the incoming temperature is not requested.**

| LINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.27.17 14:10 | CTF 7/27/17 | 1410 |
| linquished by | Date / Time | Received by | Date / Time |
| CTF 7/27/17 | 1630 | [illegible] | 7/28/17 1513 |
| linquished by | Date / Time | Received by | Date / Time |
| | | | |
| tabase Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

CDPHE REPORT REQUIRED

PWSID #

Sample Kit Sent? Yes / No

REPORT TO: PHONE: FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Analytical Report**

August 04, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Project ID:
ACZ Project ID: L38584

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38584. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38584. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Inorganic Analytical Results**

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-6

ACZ Sample ID: *L38584-01*
Date Sampled: *07/19/17 12:40*
Date Received: *07/20/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 1 | 48.3 | | * | mg/L | 1 | 5 | 08/01/17 11:00 | bce |

**Arizona license number: AZ0102**

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Inorganic Reference

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.


## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

# Inorganic Extended Qualifier Report

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38584***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38584-01** | *WG427972* | Carbon, total organic (TOC) | SM5310B | Q5 | Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory. |

# Certification Qualifiers

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38584***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38584
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | | X | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | | X |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

[1] L38584-01 Container B1864787 (YELLOW GLASS): Added 8 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 4413 | 0.3 | <=6.0 | 15 | N/A |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38584
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38584-1708041323

L38584 Chain of Custody

# CHAIN OF CUSTODY RECORD

L38584

Batch:

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

Telephone: (970) 226-5500
Facsimile: (



| EC USE ONLY Client No | CLIENT: | Stratus Companies - ACZ | | | | | | SAMPLER Name: J R Stewart |
|---|---|---|---|---|---|---|---|---|
| Sample No. S10- | SAMPLE COLLECTION INFO Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | Signature: ANALYSES REQUESTED |
| | 7/19/17 | 12:40 | | MW-6 | W | Y | 1 | Phenols |
| | | | | | | | | Total Organic Carbon TOC Only |
| | | | | | | | | ~~Method 8270 (all normal compounds, including those below)~~ |
| | | | | | | | | **Benzyl Butyl Phthalate** |
| | | | | | | | | **Bis(2-ethylhexyl) phthalate** |
| | | | | | | | | **Di-n-butyl Phthalate** |
| | | | | | | | | **Diethyl Phthalate** |
| | | | | | | | | **Dimethyl Phthalate** |
| | | | | | | | | **Di-n-octyl Phthalate** |
| | | | | | | | | **1,4-Dioxane** |
| | | | | | | | | **Benzoic Acid** |
| | | | | | | | | **Bencyl alcohol** |
| | | | | | | | | **2-Methylphenol** |

**Compliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory?
**Leaving this field blank implies that the incoming temperature is not requested.**

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.19.17 14:30 | CTF 7/19/17 | 1430 |
| Relinquished by | Date / Time | Received by | Date / Time |
| CTF 7/19/17 | 1630 | BDJ 7/20/17 | 133 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

CDPHE REPORT REQUIRED

PWSID:#

Sample Kit Sent? Yes / No

REPORT TO: Justin PHONE: 970 226 6500
FAX:
CLIENT: Stewart Labs
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Analytical Report**

August 04, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Project ID:
ACZ Project ID: L38391

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 12, 2017. This project has been assigned to ACZ's project number, L38391. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38391. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW 11

ACZ Sample ID: *L38391-01*
Date Sampled: *07/11/17 13:50*
Date Received: *07/12/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 20 | 29.9 | B | * | mg/L | 20 | 100 | 08/01/17 11:00 | bce |

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.


## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38391***

**Carbon, total organic (TOC)** SM5310B

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG427972** | | | | | | | | | | | | | |
| WG427972ICV | ICV | 08/01/17 11:00 | WI170707-1 | 100 | | 104 | mg/L | 104 | 90 | 110 | | | |
| WG427972ICB | ICB | 08/01/17 11:00 | | | | U | mg/L | | -3 | 3 | | | |
| WG427972LFB | LFB | 08/01/17 11:00 | WI170531-4 | 50 | | 49.2 | mg/L | 98 | 90 | 110 | | | |
| L38390-01DUP | DUP | 08/01/17 11:00 | | | 87.3 | 91.6 | mg/L | | | | 5 | 20 | RA |
| L38391-01AS | AS | 08/01/17 11:00 | WI170531-4 | 1000 | 29.9 | 1020 | mg/L | 99 | 90 | 110 | | | |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Inorganic Extended Qualifier Report

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38391***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38391-01** | *N*G427972 | Carbon, total organic (TOC) | SM5310B | DF | Sample required dilution due to high sediment. |
| | | | SM5310B | Q5 | Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory. |
| | | | SM5310B | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW 11

ACZ Sample ID: *L38391-01*
Date Sampled: *07/11/17 13:50*
Date Received: *07/12/17*
Sample Matrix: *Waste Water*

## Base Neutral Acid Extractables by GC/MS

Analysis Method: **M8270C GC/MS**
Extract Method: **M3520C**

Workgroup: WG427395
Analyst: itm
Extract Date: 07/17/17 13:28
Analysis Date: 07/21/17 16:24

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 120-82-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| 1,2-Dichlorobenzene | 95-50-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| 1,3-Dichlorobenzene | 541-73-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| 1,4-Dichlorobenzene | 106-46-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| 1,4-Dioxane | 123-91-1 | 12 | J | 1.86 | * | ug/L | 4 | 20 |
| 2,4,5-Trichlorophenol | 95-95-4 | | U | 1.86 | * | ug/L | 20 | 90 |
| 2,4,6-Trichlorophenol | 88-06-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2,4-Dichlorophenol | 120-83-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2,4-Dimethylphenol | 105-67-9 | | U | 1.86 | * | ug/L | 7 | 40 |
| 2,4-Dinitrophenol | 51-28-5 | | U | 1.86 | * | ug/L | 40 | 90 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2,6-Dinitrotoluene | 606-20-8 | | U | 1.86 | * | ug/L | 20 | 90 |
| 2-Chloronaphthalene | 91-58-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2-Chlorophenol | 95-57-8 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2-Methylnaphthalene | 91-57-6 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2-Methylphenol | 95-48-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| 2-Nitroaniline | 88-74-4 | | U | 1.86 | * | ug/L | 20 | 90 |
| 2-Nitrophenol | 88-75-5 | | U | 1.86 | * | ug/L | 7 | 40 |
| 3- & 4-Methylphenol | 1319-77-3 | | U | 1.86 | * | ug/L | 7 | 40 |
| 3,3-Dichlorobenzidine | 91-94-1 | | U | 1.86 | * | ug/L | 40 | 90 |
| 3-Nitroaniline | 99-09-2 | | U | 1.86 | * | ug/L | 20 | 90 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | | U | 1.86 | * | ug/L | 20 | 90 |
| 4-Bromophenyl phenyl ether | 101-55-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| 4-Chloro-3-methylphenol | 59-50-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| 4-Chloroaniline | 106-47-8 | | U | 1.86 | * | ug/L | 4 | 20 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| 4-Nitroaniline | 100-01-6 | | U | 1.86 | * | ug/L | 20 | 90 |
| 4-Nitrophenol | 100-02-07 | | U | 1.86 | * | ug/L | 20 | 90 |
| Acenaphthene | 83-32-9 | | U | 1.86 | * | ug/L | 4 | 20 |
| Acenaphthylene | 208-96-8 | | U | 1.86 | * | ug/L | 4 | 20 |
| Aniline | 62-53-3 | | U | 1.86 | * | ug/L | 20 | 90 |
| Anthracene | 120-12-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| Azobenzene | 103-33-3 | | U | 1.86 | * | ug/L | 20 | 90 |
| Benzidine | 92-87-5 | | U | 1.86 | * | ug/L | 7 | 40 |
| Benzo(a)anthracene | 56-55-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| Benzo(a)pyrene | 50-32-8 | | U | 1.86 | * | ug/L | 4 | 20 |
| Benzo(b)fluoranthene | 205-99-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| Benzo(g,h,i)perylene | 191-24-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| Benzo(k)fluoranthene | 207-08-9 | | U | 1.86 | * | ug/L | 4 | 20 |
| Benzoic Acid | 65-85-0 | | U | 1.86 | * | ug/L | 40 | 90 |
| Benzyl alcohol | 100-51-6 | | U | 1.86 | * | ug/L | 4 | 20 |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW 11

ACZ Sample ID: *L38391-01*
Date Sampled: *07/11/17 13:50*
Date Received: *07/12/17*
Sample Matrix: *Waste Water*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | 111-91-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| Bis(2-chloroethyl) ether | 111-44-4 | | U | 1.86 | * | ug/L | 4 | 20 |
| Bis(2-chloroisopropyl) ether | 108-60-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| Bis(2-ethylhexyl) phthalate | 117-81-7 | | U | 1.86 | * | ug/L | 7 | 40 |
| Butyl benzyl phthalate | 85-68-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| Chrysene | 218-01-9 | | U | 1.86 | * | ug/L | 4 | 20 |
| Dibenzo(a,h)anthracene | 53-70-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| Dibenzofuran | 132-64-9 | | U | 1.86 | * | ug/L | 4 | 20 |
| Diethylphthalate | 84-66-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| Dimethyl phthalate | 131-11-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| Di-n-butyl phthalate | 84-74-2 | | U | 1.86 | * | ug/L | 4 | 20 |
| Di-n-octyl phthalate | 117-84-0 | | U | 1.86 | * | ug/L | 4 | 20 |
| Fluoranthene | 206-44-0 | | U | 1.86 | * | ug/L | 4 | 20 |
| Fluorene | 86-73-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| Hexachlorobenzene | 118-74-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| Hexachlorobutadiene | 87-68-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| Hexachlorocyclopentadiene | 77-47-4 | | U | 1.86 | * | ug/L | 7 | 40 |
| Hexachloroethane | 67-72-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | | U | 1.86 | * | ug/L | 4 | 20 |
| Isophorone | 78-59-1 | | U | 1.86 | * | ug/L | 4 | 20 |
| Naphthalene | 91-20-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| Nitrobenzene | 98-95-3 | | U | 1.86 | * | ug/L | 4 | 20 |
| N-Nitrosodimethylamine | 62-75-9 | | U | 1.86 | * | ug/L | 20 | 90 |
| N-Nitrosodi-n-propylamine | 621-64-7 | | U | 1.86 | * | ug/L | 4 | 20 |
| N-Nitrosodiphenylamine | 86-30-6 | | U | 1.86 | * | ug/L | 4 | 20 |
| Pentachlorophenol | 87-86-5 | | U | 1.86 | * | ug/L | 20 | 90 |
| Phenanthrene | 85-01-8 | | U | 1.86 | * | ug/L | 4 | 20 |
| Phenol | 108-95-2 | | U | 1.86 | * | ug/L | 7 | 40 |
| Pyrene | 129-00-0 | | U | 1.86 | * | ug/L | 4 | 20 |
| **Surrogate Recoveries** | **CAS** | **% Recovery** | | **Dilution** | **XQ** | **Units** | **LCL** | **UCL** |
| 2,4,6-Tribromophenol | 118-79-6 | 90.8 | | 1.86 | * | % | 40 | 125 |
| 2-Fluorobiphenyl | 321-60-8 | 74.7 | | 1.86 | * | % | 50 | 110 |
| 2-Fluorophenol | 367-12-4 | 68.1 | | 1.86 | * | % | 54 | 100 |
| Nitrobenzene-d5 | 4165-60-0 | 76 | | 1.86 | * | % | 40 | 110 |
| Phenol-d6 | 13127-88-3 | 81.6 | | 1.86 | * | % | 47 | 113 |
| Terphenyl-d14 | 1718-51-0 | 19.5 | | 1.86 | * | % | 50 | 135 |

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *LCL* | Lower Control Limit |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *UCL* | Upper Control Limit |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *SURR* | Surrogate | *LFM* | Laboratory Fortified Matrix |
| *INTS* | Internal Standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *LCSS* | Laboratory Control Sample - Soil | *MS/MSD* | Matrix Spike/Matrix Spike Duplicate |
| *LCSW* | Laboratory Control Sample - Water | *PBS* | Prep Blank - Soil |
| *LFB* | Laboratory Fortified Blank | *PBW* | Prep Blank - Water |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| O | Analyte concentration is estimated due to result exceeding calibration range. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990.
(3) EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis.
(3) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(4) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38391***

## Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

**WG427395**

**MS** **Sample ID: L38390-01MS** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 15:50**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | U | 25 | ug/L | 53.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | U | 28.6 | ug/L | 61.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | U | 34.9 | ug/L | 74.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | U | 50.1 | ug/L | 71.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | U | 61.1 | ug/L | 86.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | U | 67 | ug/L | 95.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | U | 24.5 | ug/L | 52.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | U | 35.7 | ug/L | 76.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | U | 31 | ug/L | 44.0 | 40 | 115 | | | |
| PHENOL | 75060 | U | 52.7 | ug/L | 74.0 | 0 | 115 | | | |
| PYRENE | 50003 | U | U | ug/L | 0.0 | 50 | 130 | | | M2 |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 77.9 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 61.0 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.0 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 79.2 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 83.8 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 10.1 | 50 | 135 | | | S6 |

**DUP** **Sample ID: L38391-01DUP** **Analyzed: 07/21/17 16:57**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,2-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,3-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DICHLOROBENZENE | | U | 4 | ug/L | | | | 200 | 20 | RA |
| 1,4-DIOXANE | | 12 | 12.4 | ug/L | | | | 3 | 20 | RA |
| 2,4,5-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DIMETHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,6-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLORONAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLNAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3- & 4-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3,3-DICHLOROBENZIDINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 3-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 4,6-DINITRO-2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-BROMOPHENYL PHENYL ETHER | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLORO-3-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4-CHLOROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLOROPHENYL PHENYL ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| ANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| AZOBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZIDINE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(B)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(G,H,I)PERYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(K)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZOIC ACID | U | U | ug/L | | | | 0 | 20 | RA |
| BENZYL ALCOHOL | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHOXY)METHANE | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROISOPROPYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| BUTYL BENZYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| CHRYSENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZO(A,H)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZOFURAN | U | U | ug/L | | | | 0 | 20 | RA |
| DIETHYLPHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DIMETHYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-BUTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-OCTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBUTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROCYCLOPENTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROETHANE | U | U | ug/L | | | | 0 | 20 | RA |
| INDENO(1,2,3-CD)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| ISOPHORONE | U | U | ug/L | | | | 0 | 20 | RA |
| NAPHTHALENE | U | U | ug/L | | | | 0 | 20 | RA |
| NITROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIMETHYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODI-N-PROPYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIPHENYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| PENTACHLOROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PHENANTHRENE | U | U | ug/L | | | | 0 | 20 | RA |
| PHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRIBROMOPHENOL (surr) | | | % | 94.5 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | % | 76.0 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | % | 71.5 | 54 | 100 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| NITROBENZENE-D5 (surr) | % | 77.3 | 40 | 110 | | |
| PHENOL-D6 (surr) | % | 83.6 | 47 | 113 | | |
| TERPHENYL-D14 (surr) | % | 20.4 | 50 | 135 | | S6 |

**LCSW** **Sample ID: WG426931LCSW** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 14:10**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 33.2 | ug/L | 66.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | | 31.7 | ug/L | 63.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | | 43.3 | ug/L | 87.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | | 53.5 | ug/L | 71.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 58.4 | ug/L | 78.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | | 59 | ug/L | 79.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | | 38 | ug/L | 76.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 38.4 | ug/L | 77.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | | 55 | ug/L | 73.0 | 40 | 115 | | | |
| PHENOL | 75060 | | 53.4 | ug/L | 71.0 | 0 | 115 | | | |
| PYRENE | 50003 | | 41.7 | ug/L | 83.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 90.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 79.8 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 72.8 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.1 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 80.5 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 95.3 | 50 | 135 | | | |

**LCSWD** **Sample ID: WG426931LCSWD** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 14:44**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 35.1 | ug/L | 70.0 | 35 | 105 | 6 | 20 | |
| 1,4-DICHLOROBENZENE | 50013 | | 34.5 | ug/L | 69.0 | 30 | 100 | 8 | 20 | |
| 2,4-DINITROTOLUENE | 50013 | | 44.1 | ug/L | 88.0 | 50 | 120 | 2 | 20 | |
| 2-CHLOROPHENOL | 75080 | | 56.5 | ug/L | 75.0 | 35 | 105 | 5 | 20 | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 60 | ug/L | 80.0 | 45 | 110 | 3 | 20 | |
| 4-NITROPHENOL | 75120 | | 58 | ug/L | 77.0 | 0 | 125 | 2 | 20 | |
| ACENAPHTHENE | 50007 | | 40.4 | ug/L | 81.0 | 45 | 110 | 6 | 20 | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 40.6 | ug/L | 81.0 | 35 | 130 | 6 | 20 | |
| PENTACHLOROPHENOL | 75040 | | 56 | ug/L | 75.0 | 40 | 115 | 2 | 20 | |
| PHENOL | 75060 | | 54.6 | ug/L | 73.0 | 0 | 115 | 2 | 20 | |
| PYRENE | 50003 | | 42.6 | ug/L | 85.0 | 50 | 130 | 2 | 20 | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 88.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 80.6 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.6 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.5 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 77.1 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 93.7 | 50 | 135 | | | |

**PBW** **Sample ID: WG426931PBW** **Analyzed: 07/21/17 13:37**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,2-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,3-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |

| | | | | |
|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | U | ug/L | -10 | 10 |
| 1,4-DIOXANE | U | ug/L | -10 | 10 |
| 2,4,5-TRICHLOROPHENOL | U | ug/L | -50 | 50 |
| 2,4,6-TRICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DIMETHYLPHENOL | U | ug/L | -20 | 20 |
| 2,4-DINITROPHENOL | U | ug/L | -50 | 50 |
| 2,4-DINITROTOLUENE | U | ug/L | -10 | 10 |
| 2,6-DINITROTOLUENE | U | ug/L | -50 | 50 |
| 2-CHLORONAPHTHALENE | U | ug/L | -10 | 10 |
| 2-CHLOROPHENOL | U | ug/L | -10 | 10 |
| 2-METHYLNAPHTHALENE | U | ug/L | -10 | 10 |
| 2-METHYLPHENOL | U | ug/L | -10 | 10 |
| 2-NITROANILINE | U | ug/L | -50 | 50 |
| 2-NITROPHENOL | U | ug/L | -20 | 20 |
| 3- & 4-METHYLPHENOL | U | ug/L | -20 | 20 |
| 3,3-DICHLOROBENZIDINE | U | ug/L | -50 | 50 |
| 3-NITROANILINE | U | ug/L | -50 | 50 |
| 4,6-DINITRO-2-METHYLPHENOL | U | ug/L | -50 | 50 |
| 4-BROMOPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-CHLORO-3-METHYLPHENOL | U | ug/L | -10 | 10 |
| 4-CHLOROANILINE | U | ug/L | -10 | 10 |
| 4-CHLOROPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-NITROANILINE | U | ug/L | -50 | 50 |
| 4-NITROPHENOL | U | ug/L | -50 | 50 |
| ACENAPHTHENE | U | ug/L | -10 | 10 |
| ACENAPHTHYLENE | U | ug/L | -10 | 10 |
| ANILINE | U | ug/L | -50 | 50 |
| ANTHRACENE | U | ug/L | -10 | 10 |
| AZOBENZENE | U | ug/L | -50 | 50 |
| BENZIDINE | U | ug/L | -20 | 20 |
| BENZO(A)ANTHRACENE | U | ug/L | -10 | 10 |
| BENZO(A)PYRENE | U | ug/L | -10 | 10 |
| BENZO(B)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZO(G,H,I)PERYLENE | U | ug/L | -10 | 10 |
| BENZO(K)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZOIC ACID | U | ug/L | -50 | 50 |
| BENZYL ALCOHOL | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHOXY)METHANE | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-CHLOROISOPROPYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | ug/L | -20 | 20 |
| BUTYL BENZYL PHTHALATE | U | ug/L | -10 | 10 |
| CHRYSENE | U | ug/L | -10 | 10 |
| DIBENZO(A,H)ANTHRACENE | U | ug/L | -10 | 10 |
| DIBENZOFURAN | U | ug/L | -10 | 10 |
| DIETHYLPHTHALATE | U | ug/L | -10 | 10 |
| DIMETHYL PHTHALATE | U | ug/L | -10 | 10 |
| DI-N-BUTYL PHTHALATE | U | ug/L | -10 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| DI-N-OCTYL PHTHALATE | U | ug/L | | -10 | 10 |
| FLUORANTHENE | U | ug/L | | -10 | 10 |
| FLUORENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBENZENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBUTADIENE | U | ug/L | | -10 | 10 |
| HEXACHLOROCYCLOPENTADIENE | U | ug/L | | -20 | 20 |
| HEXACHLOROETHANE | U | ug/L | | -10 | 10 |
| INDENO(1,2,3-CD)PYRENE | U | ug/L | | -10 | 10 |
| ISOPHORONE | U | ug/L | | -10 | 10 |
| NAPHTHALENE | U | ug/L | | -10 | 10 |
| NITROBENZENE | U | ug/L | | -10 | 10 |
| N-NITROSODIMETHYLAMINE | U | ug/L | | -50 | 50 |
| N-NITROSODI-N-PROPYLAMINE | U | ug/L | | -10 | 10 |
| N-NITROSODIPHENYLAMINE | U | ug/L | | -10 | 10 |
| PENTACHLOROPHENOL | U | ug/L | | -50 | 50 |
| PHENANTHRENE | U | ug/L | | -10 | 10 |
| PHENOL | U | ug/L | | -20 | 20 |
| PYRENE | U | ug/L | | -10 | 10 |
| 2,4,6-TRIBROMOPHENOL (surr) | | % | 77.4 | 40 | 125 |
| 2-FLUOROBIPHENYL (surr) | | % | 74.9 | 50 | 110 |
| 2-FLUOROPHENOL (surr) | | % | 71.1 | 54 | 100 |
| NITROBENZENE-D5 (surr) | | % | 77.2 | 40 | 110 |
| PHENOL-D6 (surr) | | % | 77.3 | 47 | 113 |
| TERPHENYL-D14 (surr) | | % | 91.2 | 50 | 135 |

# Organic Extended Qualifier Report

ACZ Project ID: ***L38391***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38391-01** | WG427395 | *All Compounds* | M8270C GC/MS | D1 | Sample required dilution due to matrix. |
| | | | M8270C GC/MS | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | | Pyrene | M8270C GC/MS | M2 | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable. |
| | | Terphenyl-d14 | M8270C GC/MS | S6 | Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect. |

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

| | |
|---|---|
| 1,4-Dioxane | M8270C GC/MS |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38391
Date Received: 07/12/2017 10:38
Received By:
Date Printed: 7/12/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | X | | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | X | |

L38391-01 Container B1861121 (VIAL P): This vial contains headspace.

L38391-01 Container B1861122 (VIAL P): This vial contains headspace.

L38391-01 Container B1861123 (VIAL P): This vial contains headspace.

| | | | |
|---|---|---|---|
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 5232 | 3 | <=6.0 | 18 | N/A |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38391
Date Received: 07/12/2017 10:38
Received By:
Date Printed: 7/12/2017

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38391-1708041336

L38391 Chain of Custody

C38391

# CHAIN OF CUSTODY RECORD

Batch:

STEWART ENVIRONMENTAL CONSULTANTS, INC.
3801 Automation Way, Suite 200, Fort Collins, CO 80525
Telephone: (970) 226-5500
Facsimile: (



| EC USE ONLY Client No | CLIENT: | Stratus Companies - ACZ | | | | | | SAMPLER Name: James Stewart Signature: |
|---|---|---|---|---|---|---|---|---|
| Sample No. S10- | SAMPLE COLLECTION INFO Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
| | 7-11-17 | 13:50 | G | MW-11 | WW | Y | 8 | Method 8270 (see back of COC) - ACZ |
| | | | | | | | | Method 8015 (see back of COC) - ACZ |
| | | | | | | | | Total Organic Carbon - ACZ |

Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory? Leaving this field blank implies that the incoming temperature is not requested.

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7-11-17 17:00 | CTF | 7/11/17 1700 |
| Relinquished by | Date / Time | Received by | Date / Time |
| CTF 7/11/17 | 5:20 | [illegible] | 7/12/17 1038 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil SL = sludge
A = Air SD = Solid

PWSID #

Sample Kit Sent? Yes / No

REPORT TO: PHONE: FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

**Analytical Report**

August 04, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Project ID:
ACZ Project ID: L38585

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 20, 2017. This project has been assigned to ACZ's project number, L38585. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38585. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW-11

ACZ Sample ID: *L38585-01*
Date Sampled: *07/19/17 13:20*
Date Received: *07/20/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 1 | 35.0 | | * | mg/L | 1 | 5 | 08/01/17 11:00 | bce |

**Arizona license number: AZ0102**

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REP001.03.15.02

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Inorganic Extended Qualifier Report

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38585***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38585-01** | *W*G427972 | Carbon, total organic (TOC) | SM5310B | Q5 | Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory. |

# Certification Qualifiers

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38585***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38585
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | | X | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | | X |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

[1] L38585-01 Container B1864789 (YELLOW GLASS): Added 8 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 4413 | 0.3 | <=6.0 | 15 | N/A |

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38585
Date Received: 07/20/2017 11:33
Received By:
Date Printed: 7/20/2017

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38585-1708041332

L38585 Chain of Custody

# CHAIN OF CUSTODY RECORD

**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

L38585

**Batch:**

Telephone: (970) 226-5500
Facsimile: (



EC USE ONL
Client No:

CLIENT: **Stratus Companies - ACZ**

SAMPLER
Name: JR Stewart
Signature:

| Sample No. S10- | SAMPLE COLLECTION INFO: Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
|---|---|---|---|---|---|---|---|---|
| | 7/19/17 | 13:20 | G | MW-11 | W | Y | 1 | Phenols |
| | | | | | | | | Total Organic Carbon |
| | | | | | | | | ~~Method 8270 (all normal compounds, including those below)~~ |
| | | | | | | | | **Benzyl Butyl Phthalate** |
| | | | | | | | | **Bis(2-ethylhexyl) phthalate** |
| | | | | | | | | **Di-n-butyl Phthalate** |
| | | | | | | | | **Diethyl Phthalate** |
| | | | | | | | | **Dimethyl Phthalate** |
| | | | | | | | | **Di-n-octyl Phthalate** |
| | | | | | | | | **1,4-Dioxane** |
| | | | | | | | | **Benzoic Acid** |
| | | | | | | | | **Bencyl alcohol** |
| | | | | | | | | **2-Methylphenol** |

**Compliance samples** may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory?

**Leaving this field blank implies that the incoming temperature is not requested.**

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7-19-17 14:30 | CTF 7/19/17 | 1430 |
| Relinquished by | Date / Time | Received by | Date / Time |
| CTF 7/19/17 | 1630 | [illegible] 7/20/17 | 1133 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE
WW = waste water
DW = drinking water
L = Liquid
S = soil
SL = sludge
A = Air
SD = Solid

CDPHE REPORT REQUIRED

PWSID #

Sample Kit Sent? Yes / No

REPORT TO:
PHONE:
FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP:

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Analytical Report

August 04, 2017

Report to:
Trevor Mueller
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

cc: Trevor Mueller

Bill to:
Accounts Payable
Stewart Environmental Consultants, Inc.
2600 Canton Ct.
Unit C
Fort Collins, CO 80525

Project ID:
ACZ Project ID: L38390

Trevor Mueller:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on July 12, 2017. This project has been assigned to ACZ's project number, L38390. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L38390. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 03, 2017. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW 12

ACZ Sample ID: *L38390-01*
Date Sampled: *07/11/17 15:20*
Date Received: *07/12/17*
Sample Matrix: *Waste Water*

Wet Chemistry

| Parameter | EPA Method | Dilution | Result | Qual | XQ | Units | MDL | PQL | Date | Analyst |
|---|---|---|---|---|---|---|---|---|---|---|
| Carbon, total organic (TOC) | SM5310B | 20 | 87.3 | B | * | mg/L | 20 | 100 | 08/01/17 11:00 | bce |

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *AS* | Analytical Spike (Post Digestion) | *LCSWD* | Laboratory Control Sample - Water Duplicate |
| *ASD* | Analytical Spike (Post Digestion) Duplicate | *LFB* | Laboratory Fortified Blank |
| *CCB* | Continuing Calibration Blank | *LFM* | Laboratory Fortified Matrix |
| *CCV* | Continuing Calibration Verification standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *ICB* | Initial Calibration Blank | *MS* | Matrix Spike |
| *ICV* | Initial Calibration Verification standard | *MSD* | Matrix Spike Duplicate |
| *ICSAB* | Inter-element Correction Standard - A plus B solutions | *PBS* | Prep Blank - Soil |
| *LCSS* | Laboratory Control Sample - Soil | *PBW* | Prep Blank - Water |
| *LCSSD* | Laboratory Control Sample - Soil Duplicate | *PQV* | Practical Quantitation Verification standard |
| *LCSW* | Laboratory Control Sample - Water | *SDL* | Serial Dilution |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |
| Standard | Verifies the validity of the calibration. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.


## Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

REP001.03.15.02

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38390***

**Carbon, total organic (TOC)** SM5310B

| ACZ ID | Type | Analyzed | PCN/SCN | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **WG427972** | | | | | | | | | | | | | |
| WG427972ICV | ICV | 08/01/17 11:00 | WI170707-1 | 100 | | 104 | mg/L | 104 | 90 | 110 | | | |
| WG427972ICB | ICB | 08/01/17 11:00 | | | | U | mg/L | | -3 | 3 | | | |
| WG427972LFB | LFB | 08/01/17 11:00 | WI170531-4 | 50 | | 49.2 | mg/L | 98 | 90 | 110 | | | |
| L38390-01DUP | DUP | 08/01/17 11:00 | | | 87.3 | 91.6 | mg/L | | | | 5 | 20 | RA |
| L38391-01AS | AS | 08/01/17 11:00 | WI170531-4 | 1000 | 29.9 | 1020 | mg/L | 99 | 90 | 110 | | | |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Inorganic Extended Qualifier Report

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38390***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38390-01** | *W*G427972 | Carbon, total organic (TOC) | SM5310B | DF | Sample required dilution due to high sediment. |
| | | | SM5310B | Q5 | Sample received with inadequate chemical preservation. Additional preservation performed by the laboratory. |
| | | | SM5310B | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW 12

ACZ Sample ID: ***L38390-01***
Date Sampled: *07/11/17 15:20*
Date Received: *07/12/17*
Sample Matrix: *Waste Water*

## Base Neutral Acid Extractables by GC/MS

Analysis Method: **M8270C GC/MS**
Extract Method: **M3520C**

Workgroup: WG427395
Analyst: itm
Extract Date: 07/17/17 13:23
Analysis Date: 07/21/17 15:17

| Compound | CAS | Result | QUAL | Dilution | XQ | Units | MDL | PQL |
|---|---|---|---|---|---|---|---|---|
| 1,2,4-Trichlorobenzene | 120-82-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| 1,2-Dichlorobenzene | 95-50-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| 1,3-Dichlorobenzene | 541-73-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| 1,4-Dichlorobenzene | 106-46-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| 1,4-Dioxane | 123-91-1 | 64 | | 1.88 | * | ug/L | 4 | 20 |
| 2,4,5-Trichlorophenol | 95-95-4 | | U | 1.88 | * | ug/L | 20 | 90 |
| 2,4,6-Trichlorophenol | 88-06-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2,4-Dichlorophenol | 120-83-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2,4-Dimethylphenol | 105-67-9 | | U | 1.88 | * | ug/L | 8 | 40 |
| 2,4-Dinitrophenol | 51-28-5 | | U | 1.88 | * | ug/L | 40 | 90 |
| 2,4-Dinitrotoluene | 121-14-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2,6-Dinitrotoluene | 606-20-8 | | U | 1.88 | * | ug/L | 20 | 90 |
| 2-Chloronaphthalene | 91-58-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2-Chlorophenol | 95-57-8 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2-Methylnaphthalene | 91-57-6 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2-Methylphenol | 95-48-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| 2-Nitroaniline | 88-74-4 | | U | 1.88 | * | ug/L | 20 | 90 |
| 2-Nitrophenol | 88-75-5 | | U | 1.88 | * | ug/L | 8 | 40 |
| 3- & 4-Methylphenol | 1319-77-3 | | U | 1.88 | * | ug/L | 8 | 40 |
| 3,3-Dichlorobenzidine | 91-94-1 | | U | 1.88 | * | ug/L | 40 | 90 |
| 3-Nitroaniline | 99-09-2 | | U | 1.88 | * | ug/L | 20 | 90 |
| 4,6-Dinitro-2-methylphenol | 534-52-1 | | U | 1.88 | * | ug/L | 20 | 90 |
| 4-Bromophenyl phenyl ether | 101-55-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| 4-Chloro-3-methylphenol | 59-50-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| 4-Chloroaniline | 106-47-8 | | U | 1.88 | * | ug/L | 4 | 20 |
| 4-Chlorophenyl phenyl ether | 7005-72-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| 4-Nitroaniline | 100-01-6 | | U | 1.88 | * | ug/L | 20 | 90 |
| 4-Nitrophenol | 100-02-07 | | U | 1.88 | * | ug/L | 20 | 90 |
| Acenaphthene | 83-32-9 | | U | 1.88 | * | ug/L | 4 | 20 |
| Acenaphthylene | 208-96-8 | | U | 1.88 | * | ug/L | 4 | 20 |
| Aniline | 62-53-3 | | U | 1.88 | * | ug/L | 20 | 90 |
| Anthracene | 120-12-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| Azobenzene | 103-33-3 | | U | 1.88 | * | ug/L | 20 | 90 |
| Benzidine | 92-87-5 | | U | 1.88 | * | ug/L | 8 | 40 |
| Benzo(a)anthracene | 56-55-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| Benzo(a)pyrene | 50-32-8 | | U | 1.88 | * | ug/L | 4 | 20 |
| Benzo(b)fluoranthene | 205-99-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| Benzo(g,h,i)perylene | 191-24-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| Benzo(k)fluoranthene | 207-08-9 | | U | 1.88 | * | ug/L | 4 | 20 |
| Benzoic Acid | 65-85-0 | | U | 1.88 | * | ug/L | 40 | 90 |
| Benzyl alcohol | 100-51-6 | | U | 1.88 | * | ug/L | 4 | 20 |

**Stewart Environmental Consultants, Inc.**
Project ID:
Sample ID: MW 12

ACZ Sample ID: *L38390-01*
Date Sampled: *07/11/17 15:20*
Date Received: *07/12/17*
Sample Matrix: *Waste Water*

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Bis(2-chloroethoxy)methane | 111-91-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| Bis(2-chloroethyl) ether | 111-44-4 | | U | 1.88 | * | ug/L | 4 | 20 |
| Bis(2-chloroisopropyl) ether | 108-60-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| Bis(2-ethylhexyl) phthalate | 117-81-7 | | U | 1.88 | * | ug/L | 8 | 40 |
| Butyl benzyl phthalate | 85-68-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| Chrysene | 218-01-9 | | U | 1.88 | * | ug/L | 4 | 20 |
| Dibenzo(a,h)anthracene | 53-70-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| Dibenzofuran | 132-64-9 | | U | 1.88 | * | ug/L | 4 | 20 |
| Diethylphthalate | 84-66-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| Dimethyl phthalate | 131-11-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| Di-n-butyl phthalate | 84-74-2 | | U | 1.88 | * | ug/L | 4 | 20 |
| Di-n-octyl phthalate | 117-84-0 | | U | 1.88 | * | ug/L | 4 | 20 |
| Fluoranthene | 206-44-0 | | U | 1.88 | * | ug/L | 4 | 20 |
| Fluorene | 86-73-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| Hexachlorobenzene | 118-74-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| Hexachlorobutadiene | 87-68-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| Hexachlorocyclopentadiene | 77-47-4 | | U | 1.88 | * | ug/L | 8 | 40 |
| Hexachloroethane | 67-72-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| Indeno(1,2,3-cd)pyrene | 193-39-5 | | U | 1.88 | * | ug/L | 4 | 20 |
| Isophorone | 78-59-1 | | U | 1.88 | * | ug/L | 4 | 20 |
| Naphthalene | 91-20-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| Nitrobenzene | 98-95-3 | | U | 1.88 | * | ug/L | 4 | 20 |
| N-Nitrosodimethylamine | 62-75-9 | | U | 1.88 | * | ug/L | 20 | 90 |
| N-Nitrosodi-n-propylamine | 621-64-7 | | U | 1.88 | * | ug/L | 4 | 20 |
| N-Nitrosodiphenylamine | 86-30-6 | | U | 1.88 | * | ug/L | 4 | 20 |
| Pentachlorophenol | 87-86-5 | | U | 1.88 | * | ug/L | 20 | 90 |
| Phenanthrene | 85-01-8 | | U | 1.88 | * | ug/L | 4 | 20 |
| Phenol | 108-95-2 | | U | 1.88 | * | ug/L | 8 | 40 |
| Pyrene | 129-00-0 | | U | 1.88 | * | ug/L | 4 | 20 |
| **Surrogate Recoveries** | **CAS** | **% Recovery** | | **Dilution** | **XQ** | **Units** | **LCL** | **UCL** |
| 2,4,6-Tribromophenol | 118-79-6 | 95.1 | | 1.88 | * | % | 40 | 125 |
| 2-Fluorobiphenyl | 321-60-8 | 67.1 | | 1.88 | * | % | 50 | 110 |
| 2-Fluorophenol | 367-12-4 | 68.7 | | 1.88 | * | % | 54 | 100 |
| Nitrobenzene-d5 | 4165-60-0 | 84.8 | | 1.88 | * | % | 40 | 110 |
| Phenol-d6 | 13127-88-3 | 83.6 | | 1.88 | * | % | 47 | 113 |
| Terphenyl-d14 | 1718-51-0 | 15.4 | | 1.88 | * | % | 50 | 135 |

## Report Header Explanations

| | |
|---|---|
| *Batch* | A distinct set of samples analyzed at a specific time |
| *Found* | Value of the QC Type of interest |
| *Limit* | Upper limit for RPD, in %. |
| *Lower* | Lower Recovery Limit, in % (except for LCSS, mg/Kg) |
| *LCL* | Lower Control Limit |
| *MDL* | Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #4) Allows for instrument and annual fluctuations. |
| *PCN/SCN* | A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis |
| *PQL* | Practical Quantitation Limit. Synonymous with the EPA term "minimum level". |
| *QC* | True Value of the Control Sample or the amount added to the Spike |
| *Rec* | Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg) |
| *RPD* | Relative Percent Difference, calculation used for Duplicate QC Types |
| *Upper* | Upper Recovery Limit, in % (except for LCSS, mg/Kg) |
| *UCL* | Upper Control Limit |
| *Sample* | Value of the Sample of interest |

## QC Sample Types

| | | | |
|---|---|---|---|
| *SURR* | Surrogate | *LFM* | Laboratory Fortified Matrix |
| *INTS* | Internal Standard | *LFMD* | Laboratory Fortified Matrix Duplicate |
| *DUP* | Sample Duplicate | *LRB* | Laboratory Reagent Blank |
| *LCSS* | Laboratory Control Sample - Soil | *MS/MSD* | Matrix Spike/Matrix Spike Duplicate |
| *LCSW* | Laboratory Control Sample - Water | *PBS* | Prep Blank - Soil |
| *LFB* | Laboratory Fortified Blank | *PBW* | Prep Blank - Water |

## QC Sample Type Explanations

| | |
|---|---|
| Blanks | Verifies that there is no or minimal contamination in the prep method or calibration procedure. |
| Control Samples | Verifies the accuracy of the method, including the prep procedure. |
| Duplicates | Verifies the precision of the instrument and/or method. |
| Spikes/Fortified Matrix | Determines sample matrix interferences, if any. |

## ACZ Qualifiers (Qual)

| | |
|---|---|
| B | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| O | Analyte concentration is estimated due to result exceeding calibration range. |
| H | Analysis exceeded method hold time. pH is a field test with an immediate hold time. |
| J | Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity. |
| L | Target analyte response was below the laboratory defined negative threshold. |
| U | The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. |

## Method References


| | |
|---|---|
| (1) | EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983. |
| (2) | EPA 600/4-90/020. Methods for the Determination of Organic Compounds in Drinking Water (I), July 1990. |
| (3) | EPA 600/R-92/129. Methods for the Determination of Organic Compounds in Drinking Water (II), July 1990. |
| (4) | EPA SW-846. Test Methods for Evaluating Solid Waste. |
| (5) | Standard Methods for the Examination of Water and Wastewater. |


## Comments

| | |
|---|---|
| (1) | QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations. |
| (2) | Excluding Oil & Grease, solid & biological matrices for organic analyses are reported on a wet weight basis. |
| (3) | An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result. |
| (4) | If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit. |

For a complete list of ACZ's Extended Qualifiers, please click: http://www.acz.com/public/extquallist.pdf

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: ***L38390***

## Base Neutral Acid Extractables by GC/MS

M8270C GC/MS

**WG427395**

**MS** **Sample ID: L38390-01MS** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 15:50**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | U | 25 | ug/L | 53.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | U | 28.6 | ug/L | 61.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | U | 34.9 | ug/L | 74.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | U | 50.1 | ug/L | 71.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | U | 61.1 | ug/L | 86.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | U | 67 | ug/L | 95.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | U | 24.5 | ug/L | 52.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | U | 35.7 | ug/L | 76.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | U | 31 | ug/L | 44.0 | 40 | 115 | | | |
| PHENOL | 75060 | U | 52.7 | ug/L | 74.0 | 0 | 115 | | | |
| PYRENE | 50003 | U | U | ug/L | 0.0 | 50 | 130 | | | M2 |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 77.9 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 61.0 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.0 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 79.2 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 83.8 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 10.1 | 50 | 135 | | | S6 |

**DUP** **Sample ID: L38391-01DUP** **Analyzed: 07/21/17 16:57**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,2-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,3-DICHLOROBENZENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 1,4-DICHLOROBENZENE | | U | 4 | ug/L | | | | 200 | 20 | RA |
| 1,4-DIOXANE | | 12 | 12.4 | ug/L | | | | 3 | 20 | RA |
| 2,4,5-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DICHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DIMETHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2,6-DINITROTOLUENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLORONAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-CHLOROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLNAPHTHALENE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 2-NITROPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3- & 4-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 3,3-DICHLOROBENZIDINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 3-NITROANILINE | | U | U | ug/L | | | | 0 | 20 | RA |
| 4,6-DINITRO-2-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-BROMOPHENYL PHENYL ETHER | | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLORO-3-METHYLPHENOL | | U | U | ug/L | | | | 0 | 20 | RA |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 4-CHLOROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-CHLOROPHENYL PHENYL ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| 4-NITROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| ACENAPHTHYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| ANILINE | U | U | ug/L | | | | 0 | 20 | RA |
| ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| AZOBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZIDINE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(A)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(B)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(G,H,I)PERYLENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZO(K)FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| BENZOIC ACID | U | U | ug/L | | | | 0 | 20 | RA |
| BENZYL ALCOHOL | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHOXY)METHANE | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROETHYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-CHLOROISOPROPYL) ETHER | U | U | ug/L | | | | 0 | 20 | RA |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| BUTYL BENZYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| CHRYSENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZO(A,H)ANTHRACENE | U | U | ug/L | | | | 0 | 20 | RA |
| DIBENZOFURAN | U | U | ug/L | | | | 0 | 20 | RA |
| DIETHYLPHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DIMETHYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-BUTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| DI-N-OCTYL PHTHALATE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORANTHENE | U | U | ug/L | | | | 0 | 20 | RA |
| FLUORENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROBUTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROCYCLOPENTADIENE | U | U | ug/L | | | | 0 | 20 | RA |
| HEXACHLOROETHANE | U | U | ug/L | | | | 0 | 20 | RA |
| INDENO(1,2,3-CD)PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| ISOPHORONE | U | U | ug/L | | | | 0 | 20 | RA |
| NAPHTHALENE | U | U | ug/L | | | | 0 | 20 | RA |
| NITROBENZENE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIMETHYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODI-N-PROPYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| N-NITROSODIPHENYLAMINE | U | U | ug/L | | | | 0 | 20 | RA |
| PENTACHLOROPHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PHENANTHRENE | U | U | ug/L | | | | 0 | 20 | RA |
| PHENOL | U | U | ug/L | | | | 0 | 20 | RA |
| PYRENE | U | U | ug/L | | | | 0 | 20 | RA |
| 2,4,6-TRIBROMOPHENOL (surr) | | | % | 94.5 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | % | 76.0 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | % | 71.5 | 54 | 100 | | | |

| | | | | | | |
|---|---|---|---|---|---|---|
| NITROBENZENE-D5 (surr) | % | 77.3 | 40 | 110 | | |
| PHENOL-D6 (surr) | % | 83.6 | 47 | 113 | | |
| TERPHENYL-D14 (surr) | % | 20.4 | 50 | 135 | | S6 |

**LCSW** **Sample ID: WG426931LCSW** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 14:10**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 33.2 | ug/L | 66.0 | 35 | 105 | | | |
| 1,4-DICHLOROBENZENE | 50013 | | 31.7 | ug/L | 63.0 | 30 | 100 | | | |
| 2,4-DINITROTOLUENE | 50013 | | 43.3 | ug/L | 87.0 | 50 | 120 | | | |
| 2-CHLOROPHENOL | 75080 | | 53.5 | ug/L | 71.0 | 35 | 105 | | | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 58.4 | ug/L | 78.0 | 45 | 110 | | | |
| 4-NITROPHENOL | 75120 | | 59 | ug/L | 79.0 | 0 | 125 | | | |
| ACENAPHTHENE | 50007 | | 38 | ug/L | 76.0 | 45 | 110 | | | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 38.4 | ug/L | 77.0 | 35 | 130 | | | |
| PENTACHLOROPHENOL | 75040 | | 55 | ug/L | 73.0 | 40 | 115 | | | |
| PHENOL | 75060 | | 53.4 | ug/L | 71.0 | 0 | 115 | | | |
| PYRENE | 50003 | | 41.7 | ug/L | 83.0 | 50 | 130 | | | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 90.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 79.8 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 72.8 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.1 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 80.5 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 95.3 | 50 | 135 | | | |

**LCSWD** **Sample ID: WG426931LCSWD** **PCN/SCN: OPBNA170523-1** **Analyzed: 07/21/17 14:44**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | 50013 | | 35.1 | ug/L | 70.0 | 35 | 105 | 6 | 20 | |
| 1,4-DICHLOROBENZENE | 50013 | | 34.5 | ug/L | 69.0 | 30 | 100 | 8 | 20 | |
| 2,4-DINITROTOLUENE | 50013 | | 44.1 | ug/L | 88.0 | 50 | 120 | 2 | 20 | |
| 2-CHLOROPHENOL | 75080 | | 56.5 | ug/L | 75.0 | 35 | 105 | 5 | 20 | |
| 4-CHLORO-3-METHYLPHENOL | 75040 | | 60 | ug/L | 80.0 | 45 | 110 | 3 | 20 | |
| 4-NITROPHENOL | 75120 | | 58 | ug/L | 77.0 | 0 | 125 | 2 | 20 | |
| ACENAPHTHENE | 50007 | | 40.4 | ug/L | 81.0 | 45 | 110 | 6 | 20 | |
| N-NITROSODI-N-PROPYLAMINE | 50027 | | 40.6 | ug/L | 81.0 | 35 | 130 | 6 | 20 | |
| PENTACHLOROPHENOL | 75040 | | 56 | ug/L | 75.0 | 40 | 115 | 2 | 20 | |
| PHENOL | 75060 | | 54.6 | ug/L | 73.0 | 0 | 115 | 2 | 20 | |
| PYRENE | 50003 | | 42.6 | ug/L | 85.0 | 50 | 130 | 2 | 20 | |
| 2,4,6-TRIBROMOPHENOL (surr) | | | | % | 88.8 | 40 | 125 | | | |
| 2-FLUOROBIPHENYL (surr) | | | | % | 80.6 | 50 | 110 | | | |
| 2-FLUOROPHENOL (surr) | | | | % | 71.6 | 54 | 100 | | | |
| NITROBENZENE-D5 (surr) | | | | % | 82.5 | 40 | 110 | | | |
| PHENOL-D6 (surr) | | | | % | 77.1 | 47 | 113 | | | |
| TERPHENYL-D14 (surr) | | | | % | 93.7 | 50 | 135 | | | |

**PBW** **Sample ID: WG426931PBW** **Analyzed: 07/21/17 13:37**

| Compound | QC | Sample | Found | Units | Rec | Lower | Upper | RPD | Limit | Qual |
|---|---|---|---|---|---|---|---|---|---|---|
| 1,2,4-TRICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,2-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |
| 1,3-DICHLOROBENZENE | | | U | ug/L | | -10 | 10 | | | |

| | | | | |
|---|---|---|---|---|
| 1,4-DICHLOROBENZENE | U | ug/L | -10 | 10 |
| 1,4-DIOXANE | U | ug/L | -10 | 10 |
| 2,4,5-TRICHLOROPHENOL | U | ug/L | -50 | 50 |
| 2,4,6-TRICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DICHLOROPHENOL | U | ug/L | -10 | 10 |
| 2,4-DIMETHYLPHENOL | U | ug/L | -20 | 20 |
| 2,4-DINITROPHENOL | U | ug/L | -50 | 50 |
| 2,4-DINITROTOLUENE | U | ug/L | -10 | 10 |
| 2,6-DINITROTOLUENE | U | ug/L | -50 | 50 |
| 2-CHLORONAPHTHALENE | U | ug/L | -10 | 10 |
| 2-CHLOROPHENOL | U | ug/L | -10 | 10 |
| 2-METHYLNAPHTHALENE | U | ug/L | -10 | 10 |
| 2-METHYLPHENOL | U | ug/L | -10 | 10 |
| 2-NITROANILINE | U | ug/L | -50 | 50 |
| 2-NITROPHENOL | U | ug/L | -20 | 20 |
| 3- & 4-METHYLPHENOL | U | ug/L | -20 | 20 |
| 3,3-DICHLOROBENZIDINE | U | ug/L | -50 | 50 |
| 3-NITROANILINE | U | ug/L | -50 | 50 |
| 4,6-DINITRO-2-METHYLPHENOL | U | ug/L | -50 | 50 |
| 4-BROMOPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-CHLORO-3-METHYLPHENOL | U | ug/L | -10 | 10 |
| 4-CHLOROANILINE | U | ug/L | -10 | 10 |
| 4-CHLOROPHENYL PHENYL ETHER | U | ug/L | -10 | 10 |
| 4-NITROANILINE | U | ug/L | -50 | 50 |
| 4-NITROPHENOL | U | ug/L | -50 | 50 |
| ACENAPHTHENE | U | ug/L | -10 | 10 |
| ACENAPHTHYLENE | U | ug/L | -10 | 10 |
| ANILINE | U | ug/L | -50 | 50 |
| ANTHRACENE | U | ug/L | -10 | 10 |
| AZOBENZENE | U | ug/L | -50 | 50 |
| BENZIDINE | U | ug/L | -20 | 20 |
| BENZO(A)ANTHRACENE | U | ug/L | -10 | 10 |
| BENZO(A)PYRENE | U | ug/L | -10 | 10 |
| BENZO(B)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZO(G,H,I)PERYLENE | U | ug/L | -10 | 10 |
| BENZO(K)FLUORANTHENE | U | ug/L | -10 | 10 |
| BENZOIC ACID | U | ug/L | -50 | 50 |
| BENZYL ALCOHOL | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHOXY)METHANE | U | ug/L | -10 | 10 |
| BIS(2-CHLOROETHYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-CHLOROISOPROPYL) ETHER | U | ug/L | -10 | 10 |
| BIS(2-ETHYLHEXYL) PHTHALATE | U | ug/L | -20 | 20 |
| BUTYL BENZYL PHTHALATE | U | ug/L | -10 | 10 |
| CHRYSENE | U | ug/L | -10 | 10 |
| DIBENZO(A,H)ANTHRACENE | U | ug/L | -10 | 10 |
| DIBENZOFURAN | U | ug/L | -10 | 10 |
| DIETHYLPHTHALATE | U | ug/L | -10 | 10 |
| DIMETHYL PHTHALATE | U | ug/L | -10 | 10 |
| DI-N-BUTYL PHTHALATE | U | ug/L | -10 | 10 |

| | | | | | |
|---|---|---|---|---|---|
| DI-N-OCTYL PHTHALATE | U | ug/L | | -10 | 10 |
| FLUORANTHENE | U | ug/L | | -10 | 10 |
| FLUORENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBENZENE | U | ug/L | | -10 | 10 |
| HEXACHLOROBUTADIENE | U | ug/L | | -10 | 10 |
| HEXACHLOROCYCLOPENTADIENE | U | ug/L | | -20 | 20 |
| HEXACHLOROETHANE | U | ug/L | | -10 | 10 |
| INDENO(1,2,3-CD)PYRENE | U | ug/L | | -10 | 10 |
| ISOPHORONE | U | ug/L | | -10 | 10 |
| NAPHTHALENE | U | ug/L | | -10 | 10 |
| NITROBENZENE | U | ug/L | | -10 | 10 |
| N-NITROSODIMETHYLAMINE | U | ug/L | | -50 | 50 |
| N-NITROSODI-N-PROPYLAMINE | U | ug/L | | -10 | 10 |
| N-NITROSODIPHENYLAMINE | U | ug/L | | -10 | 10 |
| PENTACHLOROPHENOL | U | ug/L | | -50 | 50 |
| PHENANTHRENE | U | ug/L | | -10 | 10 |
| PHENOL | U | ug/L | | -20 | 20 |
| PYRENE | U | ug/L | | -10 | 10 |
| 2,4,6-TRIBROMOPHENOL (surr) | | % | 77.4 | 40 | 125 |
| 2-FLUOROBIPHENYL (surr) | | % | 74.9 | 50 | 110 |
| 2-FLUOROPHENOL (surr) | | % | 71.1 | 54 | 100 |
| NITROBENZENE-D5 (surr) | | % | 77.2 | 40 | 110 |
| PHENOL-D6 (surr) | | % | 77.3 | 47 | 113 |
| TERPHENYL-D14 (surr) | | % | 91.2 | 50 | 135 |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Organic Extended Qualifier Report

ACZ Project ID: ***L38390***

| ACZ ID | WORKNUM | PARAMETER | METHOD | QUAL | DESCRIPTION |
|---|---|---|---|---|---|
| **L38390-01** | WG427395 | *All Compounds* | M8270C GC/MS | D1 | Sample required dilution due to matrix. |
| | | | M8270C GC/MS | RA | Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL). |
| | | Pyrene | M8270C GC/MS | M2 | Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable. |
| | | Terphenyl-d14 | M8270C GC/MS | S6 | Surrogate recovery was below laboratory and method acceptance limits. Reextraction and/or reanalysis confirms low recovery caused by matrix effect. |

GC/MS

The following parameters are not offered for certification or are not covered by NELAC certificate #ACZ.

| | |
|---|---|
| 1,4-Dioxane | M8270C GC/MS |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

# Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38390
Date Received: 07/12/2017 10:38
Received By:
Date Printed: 7/12/2017

## Receipt Verification

| | YES | NO | NA |
|---|---|---|---|
| 1) Is a foreign soil permit included for applicable samples? | | | X |
| 2) Is the Chain of Custody form or other directive shipping papers present? | X | | |
| 3) Does this project require special handling procedures such as CLP protocol? | | | X |
| 4) Are any samples NRC licensable material? | | | X |
| 5) If samples are received past hold time, proceed with requested short hold time analyses? | X | | |
| 6) Is the Chain of Custody form complete and accurate? | X | | |
| 7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples? | | X | |

## Samples/Containers

| | YES | NO | NA |
|---|---|---|---|
| 8) Are all containers intact and with no leaks? | X | | |
| 9) Are all labels on containers and are they intact and legible? | X | | |
| 10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time? | X | | |
| 11) For preserved bottle types, was the pH checked and within limits? [1] | | X | |
| 12) Is there sufficient sample volume to perform all requested work? | X | | |
| 13) Is the custody seal intact on all containers? | | | X |
| 14) Are samples that require zero headspace acceptable? | | X | |
| 15) Are all sample containers appropriate for analytical requirements? | X | | |
| 16) Is there an Hg-1631 trip blank present? | | | X |
| 17) Is there a VOA trip blank present? | | | X |
| 18) Were all samples received within hold time? | X | | |

[1] L38390-01 Container B1861104 (YELLOW): Added 2 mls sulfuric acid to the sub-sample to adjust the pH to the appropriate range.

L38390-01 Container B1861105 (VIAL P): This vial contains headspace.

L38390-01 Container B1861106 (VIAL P): This vial contains headspace.

## Chain of Custody Related Remarks

## Client Contact Remarks

## Shipping Containers

| Cooler Id | Temp(°C) | Temp Criteria(°C) | Rad(µR/Hr) | Custody Seal Intact? |
|---|---|---|---|---|
| 5232 | 3 | <=6.0 | 18 | N/A |

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

**Stewart Environmental Consultants, Inc.**

ACZ Project ID: L38390
Date Received: 07/12/2017 10:38
Received By:
Date Printed: 7/12/2017

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

L38390-1708041330

L38390 Chain of Custody

C38390

# CHAIN OF CUSTODY RECORD

**Batch:**


**STEWART ENVIRONMENTAL CONSULTANTS, INC.**
**3801 Automation Way, Suite 200, Fort Collins, CO 80525**

Telephone: (970) 226-5500
Facsimile: (




| EC USE ONLY Client No | CLIENT: | Stratus Companies - ACZ | | | | | | SAMPLER Name: / Signature: |
|---|---|---|---|---|---|---|---|---|
| Sample No. S10- | SAMPLE COLLECTION INFO Date | Time | Grab / Comp | CLIENT SAMPLE IDENTIFICATION | Matrix Type | QC Report Needed | Total No. of Cont. | ANALYSES REQUESTED |
| | 7.1.17 | 15:20 | G | MJ-12 | SW | Y | 8 | Method 8270 (see back of COC) - ACZ |
| | | | | | | | | Method 8015 (see back of COC) - ACZ |
| | | | | | | | | Total Organic Carbon - ACZ |

Compliance samples may require you to report the temperature of samples as they arrive in the laboratory. Would you like the temperature of samples recorded upon receipt by the laboratory? Leaving this field blank implies that the incoming temperature is not requested.

| RELINQUISHED BY | DATE / TIME | Received by | Date / Time |
|---|---|---|---|
| | 7.1.17 12:00 | | 7/12/17 1700 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | 7/11/17 5:20 | | 7/12/17 1058 |
| Relinquished by | Date / Time | Received by | Date / Time |
| | | | |
| Database Entry By | | Date | |

REQUESTED COMPLETION DATE

MATRIX TYPE:
WW = wastewater
DW = drinking water
L = liquid
S = soil
SL = sludge
A = Air
Sol = Solid

PWSID #:

Sample Kit Sent? Yes / No

REPORT TO:
PHONE:
FAX:
CLIENT:
ADDRESS:
CITY, STATE ZIP:
INVOICE TO:
ADDRESS:
CITY, STATE ZIP: